

DEPARTMENT OF THE INTERIOR

FRANKLIN K. LANE, Secretary

UNITED STATES GEOLOGICAL SURVEY

GEORGE OTIS SMITH, Director

BULLETIN 674

SPIRIT LEVELING

IN THE

STATE OF WASHINGTON

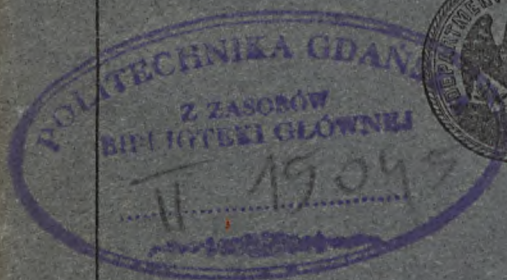
1896 TO 1917, INCLUSIVE

R. B. MARSHALL, CHIEF GEOGRAPHER

Work done in cooperation with the State of Washington from

1909 to 1916, inclusive

Henry Landes, State Geologist



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*Bibl. Kat. Markotkin
Dz. Nr. 8.*



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ZAKŁADU GEOLOGII~~

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1918





ELEVATION OF MOUNT RAINIER.

The elevation of the highest snow-capped summit of Mount Rainier was determined by C. H. Birdseye in 1913 from carefully checked vertical angles based on spirit-level elevation of McClure Rock. The distance between McClure Rock and Crater, a station marked by a rock cairn on the bare south rim of the mountain, was computed from triangulation data. The distance from Crater to the summit, which is 980 feet, was measured by stadia and checked by plane-table intersections.

The elevation of Crater is 14,267 feet and that of the summit 14,408 feet.

Mount Rainier is, so far as known, the second highest point in the United States.



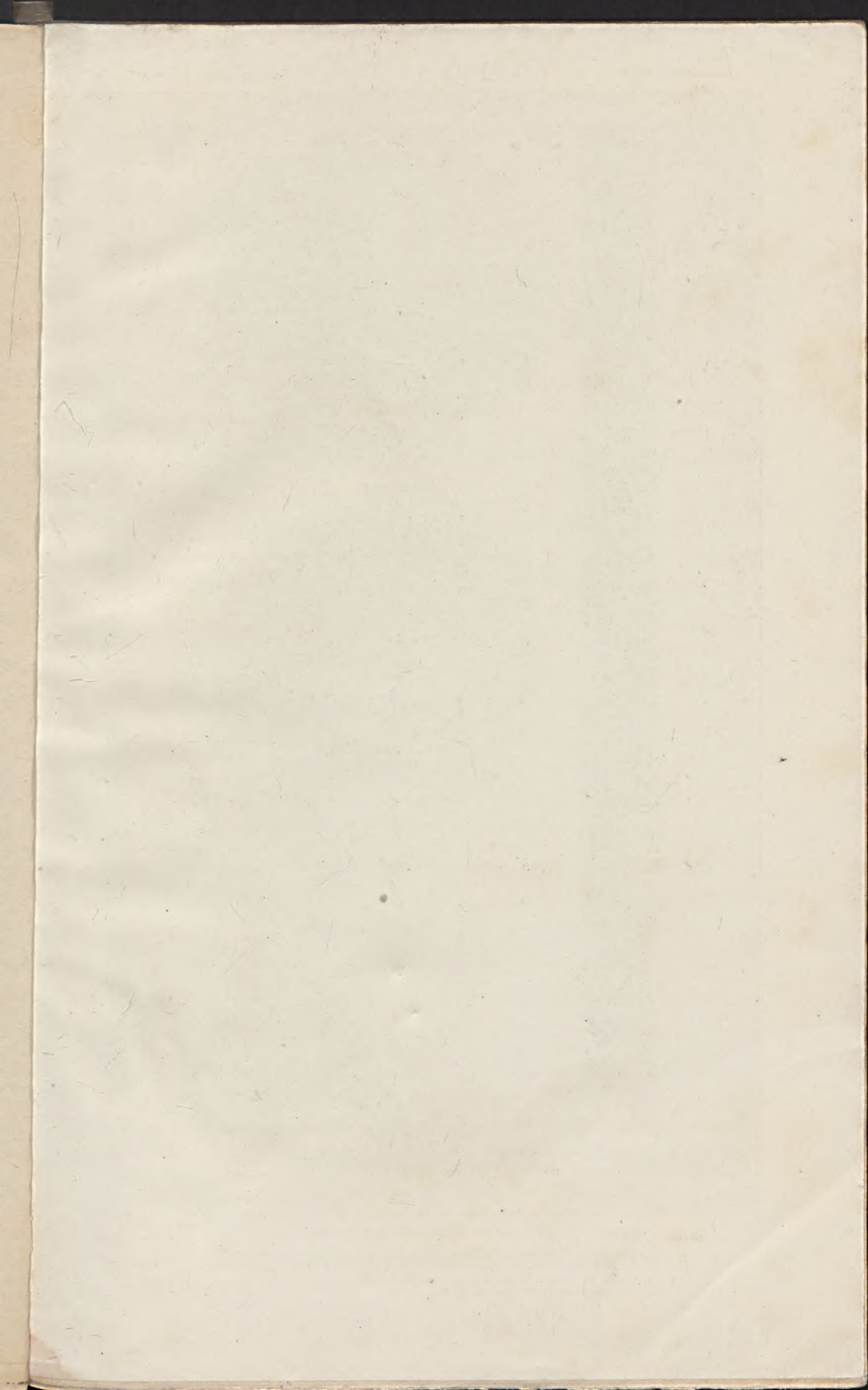
CONTENTS.

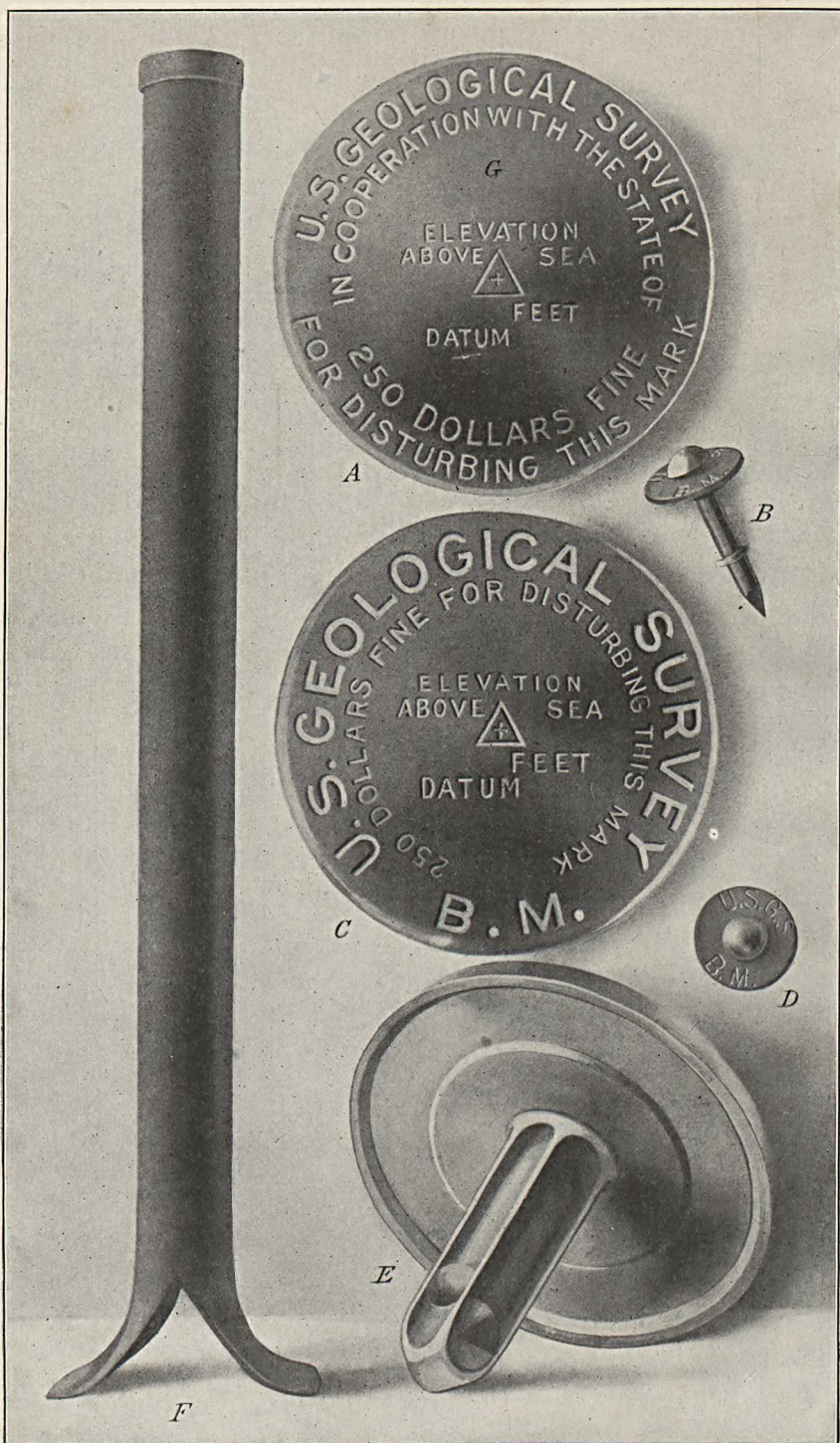
	Page.
Introduction.....	5
Cooperation.....	5
Previous publications.....	5
Personnel.....	5
Classification.....	5
Bench marks.....	6
Datum.....	6
Topographic maps.....	7
Precise and primary leveling.....	7
Appendix.....	189
Index.....	195

ILLUSTRATION.

	Page.
PLATE I. Geological Survey bench marks.....	5







GEOLOGICAL SURVEY BENCH MARKS.

- A. Tablet used in cooperating States. The State name is inserted at G.
 B and D. Copper temporary bench mark, consisting of a nail and copper washer.
 A, C, and E. Tablets for stone or concrete structures.
 F. Iron post used where there is no rock.

SPIRIT LEVELING IN THE STATE OF WASHINGTON, 1896 TO 1917, INCLUSIVE.

R. B. MARSHALL, *Chief Geographer.*



INTRODUCTION.

Cooperation.—The State of Washington contributed financially to the work from 1909 to 1916, inclusive.

Previous publications.—All results of spirit leveling in Washington previously published by the United States Geological Survey in Bulletins 457 and 557 and all results of later work in the State are included in this report. All elevations are based on mean sea level datum and are in accord with the precise-level lines of the United States Coast and Geodetic Survey from Seattle to Wallula and from Pasco to Spokane.

Personnel.—The field work previous to 1903 was done under the general direction of R. U. Goode, geographer; that for 1903 to 1906, inclusive, under E. M. Douglas, geographer; that for 1907 under R. B. Marshall, geographer; and the later work under T. G. Gerdine, geographer, under the general direction of R. B. Marshall, chief geographer. Credit is given to the different levelmen in the introduction to each list. The office work in preparation of lists was done mainly by S. S. Gannett, geographer, under the general direction of E. M. Douglas, geographer.

Classification.—The elevations are classified as precise or primary, according to the methods employed in their determination. For precise lines instruments and rods of the highest grade are used, each line is run in both forward and backward directions, and every precaution is taken to guard against error. The allowable divergence between the forward and the backward lines in feet is represented by the formula $0.017 \sqrt{D}$, in which D is the distance in miles between bench marks. For primary lines standard Y levels are used; lines are run in circuits or are closed on precise lines, with an allowable closing error in feet represented by the formula $0.05 \sqrt{D}$, in which D is the length of the circuit in miles, sufficient care being given the work to maintain this standard. For levels of both classes careful office adjustments are made, the small outstanding errors being distributed over the lines.

Bench marks.—The standard bench marks are of two forms. The first form is a circular bronze or aluminum tablet (*C* and *E*, Pl. I), $3\frac{1}{2}$ inches in diameter and one-quarter inch thick, having a 3-inch stem, which is cemented into a drill hole in solid rock in the wall of some public building, a bridge abutment, or other substantial masonry structure. The second form (*F*, Pl. I), used where masonry or rock is not available, consists of a hollow wrought-iron post $3\frac{1}{2}$ inches in outer diameter and 4 feet in length, which is set about 3 feet in the ground. The bottom is spread out to a width of 10 inches in order to give a firm bearing on the earth. A bronze or aluminum-bronze cap is riveted upon the top of the post. A third style of bench mark with abbreviated lettering (*B* and *D*, Pl. I) is used for unimportant points. This consists of a special copper nail $1\frac{1}{2}$ inches in length driven through a copper washer seven-eighths inch in diameter. The tablets as well as the caps on the iron posts are appropriately lettered, and cooperation by States is indicated by the addition of the State name (*G*, Pl. I).

The numbers stamped on the bench marks described in the following pages represent the elevations to the nearest foot as determined by the levelman. These numbers are stamped with $\frac{3}{16}$ -inch steel dies on the tablets or post caps, to the left of the word "feet." The office adjustment of the notes and the reduction to mean sea level datum may so change some of the figures that the original markings are 1 or 2 feet in error. It is assumed that engineers and others who have occasion to use the bench-mark elevations will apply to the Director of the United States Geological Survey at Washington, D. C., for the adjusted values, and will use the markings as identification numbers only.

Datum.—All elevations determined by the United States Geological Survey and the United States Coast and Geodetic Survey are referred to mean sea level, which is the level that the sea would assume if the influence of winds and tides was eliminated. This level is not the elevation determined from the mean of the highest and the lowest tides, nor is it the half sum of the mean of all the high tides and the mean of all the low tides, which is called the half-tide level. *Mean sea level is the average height of the water, all stages of the tide being considered.* It is determined from observations made by means of tidal gages placed at stations where local conditions, such as long, narrow bays, rivers, and like features, will not affect the height of the water. To obtain even approximately correct results these observations must extend over at least one lunar month, and if accuracy is desired they must extend over several years. At ocean stations the half-tide level and the mean sea level usually differ but little. It is assumed that there is no difference between the mean sea levels determined from observations in the Atlantic Ocean, the Gulf of Mexico, and the Pacific Ocean.

The connection with tidal stations for bench marks in certain areas that lie at some distance from the sea coast, when still uncertain, is indicated by the addition of a letter or word to the right of the word "DATUM" on tablets or posts. For such areas corrections for published results will be made from time to time as the precise-level lines of the United States Geological Survey, the United States Coast and Geodetic Survey, or other Government organizations are extended.

Topographic maps.—Maps of the following quadrangles, wholly or partly in Washington, have been published by the United States Geological Survey up to January 15, 1918. They may be obtained for 10 cents each, or (except as noted) \$3 for 50, on application to the Director of the Survey at Washington, D. C.

Arlington (Oreg.-Wash.).

Beverly.

Blaine.

Blalock Island.

Cedar Lake.

Chehalis.

Chelan.

Chiwaukum.

Chopaka.

Coyote Rapids.

Ellensburg.

Glacier Peak.

Gray Harbor.

Methow.

Moses Lake.

Mount Adams.

Mount Aix.

Mount Baker district.

Mount Hood (Oreg.-Wash.).

Mount Ranier.

Mount Stuart.

Mount Vernon.

Oakesdale.

Okanogan.

Osoyoos.

Portland.

Priest Rapids.

Pullman.

Quincy.

Red Rock.

Republic.

Seattle.

Seattle land classification.¹

Skykomish.

Snohomish.

Snoqualmie.

Spokane.

Stehekin.

Stilaguamish.

Sumas.

Tacoma.

Tacoma land classification.¹

Umatilla.

Wenatchee.

Winchester.

Zillah.

PRECISE AND PRIMARY LEVELING.

ANDERSON QUADRANGLE.

[Latitude 47°-47° 15'; longitude 122° 30'-122° 45'.]

From Lakeview southwest along Northern Pacific Ry. to point 1.9 miles southwest of Sherlock.

Primary leveling by E. M. Bandli in 1912-13.

Lakeview, 1.8 miles south of, 40 feet west of track near road crossing, in telegraph pole; copper nail marked "271.8".....	Feet. 272.24
Country Club station, 60 feet north of, 6 feet north of track; iron post stamped "Prim. Trav. Sta. No. 18, 277".....	277 720
Dupont, 4 miles northeast of, 10 feet east of track at road crossing, in railroad crossing signpost; copper nail marked "277.3".....	277.81

¹ Shows wooded areas. No wholesale rate.

Dupont, 3.6 miles northeast of, 10 feet east of track at road crossing, in railroad crossing signpost; copper nail marked "265.0".....	Feet. 265.46
Dupont, 2.9 miles northeast of, at road crossing, 10 feet east of track, in railroad crossing signpost; copper nail marked "275.8".....	276.29
Dupont, 1.8 miles northeast of, 30 feet north of track at road crossing, in telegraph pole; copper nail marked "257.5".....	257.98
Dupont, 0.7 mile northeast of, 6 feet northwest of track, 2 feet south of railroad crossing sign; iron post stamped "Prim. Trav. Sta. No. 17, 284, 1912".....	284.612
Dupont, in front of station, 50 feet southeast of track, in telegraph pole; copper nail marked "252.9".....	253.38
Dupont, 0.9 mile southwest of, 12 feet east of track, in railroad crossing post; copper nail marked "252.6".....	253.00
Dupont, 2.3 miles southwest of, 4 feet south of track, in foundation of bridge crossing above track; copper nail marked "189.4".....	189.81
Sherlock, 1 mile northwest of, 6 feet from track, in foundation of road-crossing electric-bell signpost; copper nail marked "73.3".....	73.75
Sherlock, road bridge over Nisqually River, in southeast corner of concrete pier; aluminum tablet stamped "26.8".....	27.213
Sherlock, 0.3 mile southwest of, 6 feet southeast of track, 10 feet southeast of road intersection; iron post stamped "Prim. Trav. Sta. No. 16, 23".....	23.338
Sherlock, 1.2 miles southwest of, in 1-mile post southwest of Sherlock station; copper nail marked "46.8".....	47.21
Sherlock, 1.9 miles southwest of, in support in west end of bridge (No. 9) crossing over private road; copper nail marked "78.1".....	78.52

**From point 2.1 miles south of Lakeview southwest along Northern Pacific Ry. to Roy.
(Leveled twice.)**

Lakeview, 3.4 miles south of, 50 feet west of track, in telephone pole No. 38-18; copper nail marked "305.3".....	305.65
Lakeview, 4.6 miles south of, 3 feet northeast of railroad-crossing sign, 6 feet west of track, 10 feet north of road; iron post stamped "Prim. Trav. Sta. No. 3, 329, 1912".....	329.806
Lakeview, 6 miles south of, 150 feet south of private-road crossing, 30 feet east of track, in telegraph pole; copper nail marked "338.0".....	338.30
Lakeview, 7.1 miles south of, 42 feet west of track, 30 feet north of telegraph pole No. 34-29, in telephone pole not numbered; copper nail marked "350.1".....	350.42
Lakeview, 8.2 miles south of, 10 feet east of track, 15 feet southeast of track and road intersection; iron post stamped "Prim. Trav. Sta. No. 4, 345, 1912".....	344.917
Roy, 1 mile north of, 40 feet west of track, south of road crossing, in telegraph pole; copper nail marked "327.2".....	327.52
Roy, 0.4 mile north of, at southeast corner of first road crossing north of Roy, in foundation of cattle guard; copper nail marked "319.8".....	320.15

ARLINGTON QUADRANGLE.

[Latitude 45° 30'-46°; longitude 120°-120° 30'.]

From McCredie southwest along Spokane, Portland & Seattle Ry. to Rock Creek canyon.

Primary leveling in 1913 by D. S. Birkett.

McCredie, 200 feet west of station, 80 feet south of track, 0.1 mile east of section house, in boulder 2 feet high; aluminum tablet stamped "243 Wash 1913".....	243.505
McCredie, 0.8 mile west of, 175 feet east of milepost 157, 30 feet north of track, in base of telegraph pole; spike marked "U. S. 248 B. M.".....	248.50

McCredie, 1.8 miles west of, 20 feet north of track, in base of telegraph-pole milepost 156; spike marked "U. S. 232 B. M."	Feet. 231.75
McCredie, 2.9 miles west of, 55 feet east of milepost, 155, 100 feet north of track, in top of large boulder; aluminum tablet stamped "236 Wash 1913"	236.276
Moonax, 1.7 miles east of, 0.1 mile west of "S. 1 mile" sign, 25 feet north of track, south of pole, on top of basalt boulder; circle of paint marked "U. S. 237 B. M."	236.98
Moonax, 1.2 miles east of, on north side of west end of railroad bridge 153-8 over Pine Creek, in top of concrete abutment; aluminum tablet stamped "236 Wash 1913"	235.876
Columbia River, at mouth of Pine Creek; surface of water June 10, 1913 (water very high)	218.5
Moonax, 0.3 mile east of, 175 feet east of milepost 153; spike in base of telegraph pole marked "U. S. 231 B. M."	230.64
Moonax, on southeast side of concrete foundation to railroad water tank; chiseled square marked "U. S. 238 B. M."	238.23
Moonax, 1.5 miles west of, 525 feet east of milepost 151, in base of telegraph pole; spike marked "U. S. 235 B. M."	234.57
Roosevelt, 3.2 miles east of, 45 feet west of milepost 150, 8 feet south of track on level with rail, in rock cut, in solid basalt; aluminum tablet stamped "238 Wash 1913"	237.577
Columbia River, near milepost 150; surface of water June 12, 1913 (water very high)	214.9
Roosevelt, 2.2 miles east of, 450 feet east of milepost 149, 10 feet north of track, on level with rail, in small cut in solid basalt; circle of paint marked "U. S. 238 B. M."	238.04
Roosevelt, 1.4 miles east of, 100 feet east of road crossing, 10 feet south of track, on top of large basalt boulder; circle of paint marked "U. S. 235 B. M."	234.68
Roosevelt, 0.7 mile east of west end on north side of railroad bridge 147-5 over Wood Creek, in top of concrete abutment; aluminum tablet stamped "234 Wash 1913"	233.921
Roosevelt, on southwest corner of foundation to water tank; copper tag in top of beam, marked "U. S. 236 B. M."	235.76
Roosevelt, 1 mile west of, 1,200 feet west of milepost 146, 15 feet south of track; top of large boulder at level of rail, marked "U. S. 236 B. M."	235.86
Roosevelt, 2 miles west of, 1,400 feet west of milepost 145, 20 feet north of track, on top of large rock; circle of paint marked "U. S. 235 B. M."	235.14
Roosevelt, 3.1 miles west of, 0.4 mile west of milepost 144, 10 feet north of track, on vertical face of rock; circle of paint marked "U. S. 234 B. M."	233.90
Roosevelt, 4.1 miles west of, 12 feet south of track, east end on south side of concrete culvert over Lady Creek, 3 feet below rail; aluminum tablet stamped "224 Wash 1913"	223.630
Sundale, 1 mile east of, 0.4 mile west of milepost 142, 20 feet north of track, on top of large basalt boulder; circle of paint marked "U. S. 226 B. M."	225.58
Sundale, 300 feet east of milepost 141, on north side of track, in concrete abutment at east end of railroad bridge 141-0; aluminum tablet stamped "221 Wash 1913"	220.686
Sundale, in front of station, top of rail	221.7
Sundale, 1 mile west of, 235 feet east of milepost 140, 12 feet north of track in top of columnar boulder in face of cut; circle of paint marked "U. S. 225 B. M."	224.88

Sundale, 2.1 miles west of, 0.3 mile west of milepost 139, 10 feet south of track, in face of cut, on top of basalt boulder; circle of paint marked "U. S. 223 B. M."	Feet. 222. 79
Sundale, 3 miles west of, 1,200 feet west of milepost 138, 35 feet north of track, on top of large boulder; circle of paint marked "U. S. 222 B. M." ..	221.76
Fountain, 1.7 miles east of, 1,200 feet east of milepost 137, 150 feet into rock cut from west end, 8 feet south of track, in face of cut in solid rock; aluminum tablet stamped "223 Wash 1913"	222. 374
Fountain, 0.7 mile east of, 80 feet north of track, on boulder in line of old rock fence; circle of paint marked "U. S. 223 B. M."	222. 28
Fountain, on center of southern of two east concrete foundation piers of water tank; aluminum tablet stamped "219 Wash 1913"	218. 496
Fountain, 0.8 mile west of, 8 feet south of track, at east end of first cut; top of rock marked "U. S. 220 B. M."	220. 10
Fountain, 1.2 miles west of, 200 feet west of milepost 134, 35 feet north of track, on top of boulder, circle of paint marked "U. S. 217 B. M."	216.63
Fountain, 2 miles west of, on north side of east end of concrete abutment to railroad bridge 133-5 over Rock Creek; aluminum tablet stamped "214 Wash 1913"	213. 391

From Roosevelt west and north along highways to Bickleton.

Roosevelt, inside and 40 feet east of southwest corner of schoolhouse yard, in solid rock; aluminum tablet stamped "265 Wash 1913" (stamped incorrectly)	254. 489
Roosevelt, 1 mile northwest of, 60 feet east of point where road turns into lane between fences, 40 feet south of road, in base of fence post; spike marked "U. S. 368 B. M."	368. 23
Roosevelt, 2 miles northwest of, 60 feet north of road, on stony alluvial fan, on top of large basalt boulder; circle of paint marked "U. S. 442 B. M." ..	442. 08
Roosevelt, 2.6 miles northwest of, at road fork, base of hill on south side of road, 200 feet south of road, in base of fence post; spike marked "U. S. 453 B. M."	452. 54
Roosevelt, 4 miles northwest of, southwest corner of SE. $\frac{1}{4}$ SW. $\frac{1}{4}$ sec. 14, T. 3 N., R. 20 E., inside corner of fence on east where road turns north, on Perry McKown's ranch; iron post stamped "663 Wash 1913"	663. 005
Perry McKown's house, opposite, at crest of hill, on west side of road; top of rock marked "715"	715. 15
Roosevelt, 5.3 miles northwest of, south end of gate to private road to Luginbuhl's ranch, in gate post; spike marked "U. S. 628 B. M."	628. 04
Luginbuhl's ranch, 0.6 mile north of, northwest corner of field, in base of gate post; spike marked "U. S. 798 B. M."	797. 93
White's ranch, 5 feet south of fence corner on east side of lane, T. 3 N., R. 20 E., about in center of sec. 4, 500 feet west of house at R. D. White's ranch; iron post stamped "994 Wash 1913"	993. 758
White's ranch, 0.5 mile north of, first bridge uphill (in gulch), in foundation; spike marked "U. S. 1203 B. M."	1, 206. 94
White's ranch, 1.6 miles north of, in gulch, 20 feet east of road, on top of basalt boulder; circle of paint marked "U. S. 1405 B. M."	1, 404. 76
White's ranch, 2.2 miles north of, in canyon, in brace on northwest corner of bridge over stream; spike marked "U. S. 1720 B. M."	1, 719. 39
Dot, 4.5 miles south of, 350 feet east of G. Binn's ranch house, 15 feet north of road, on top of large basalt boulder; circle of paint marked "U. S. 2215 B. M."	2, 214. 80
Dot, 3.6 miles south of, southwest corner of NW. $\frac{1}{4}$ SW. $\frac{1}{4}$ sec. 20 T. 4 N., R. 20 E., in base of corner fence post; spike marked "U. S. 2416 B. M." ..	2, 415. 60

T. 4 N., R. 20 E., southeast corner of NE. $\frac{1}{4}$ sec. 19, 3.4 miles south of Dot, 35 feet north of corner in line of fence; iron post stamped "2446 Wash 1913"	Feet. 2, 445.743
T. 4 N., R. 20 E., southeast corner of sec. 18, in base of corner fence post; spike marked "U. S. 2429 B. M."	2, 428.74
Dot, northwest corner of church building, at base	2, 201.02
Dot, 200 feet east of schoolhouse, 40 feet west of road, in base of telephone pole; spike marked "U. S. 2184 B. M."	2, 183.90
Dot, 15 feet north of, southwest corner of sec. 32, in line of fence, T. 5 N., R. 20 E.; iron post stamped "2276 Wash 1913"	2, 275.951
T. 5 N., R. 20 E., northeast corner of sec. 31, in base of telephone pole; spike marked "U. S. 2387 B. M."	2, 387.14
T. 5 N., R. 20 E., between secs. 29 and 30, near telephone pole; surface of ground, pole painted "U. S. 2461 B. M."	2, 460.50
T. 5 N., R. 20 E., 0.5 mile south of northeast corner of sec. 19, 40 feet north of gate in fence, in post; spike marked "U. S. 2550 B. M."	2, 549.74
T. 5 N., R. 20 E., northwest corner of NE. $\frac{1}{4}$ sec. 19, 4.3 miles south of Cleveland, at turn of road, south side within fence; iron post stamped "2623 Wash 1913"	2, 622.976
Mason's place, opposite; surface of ground, painted on telephone pole at top of hill "2812"	2, 812.04
T. 5 N., R. 20 E., northwest corner of NE. $\frac{1}{4}$ sec. 7, 40 feet east of road, in base of telephone pole; spike marked "U. S. 2922 B. M."	2, 922.18
Cleveland, 1 mile south of, 150 feet north of east-west fence, 40 feet west of road, in base of telephone pole; spike marked "U. S. 3009 B. M."	3, 008.46
Cleveland, 0.2 mile west of, quarter corner between secs. 31 and 30, T. 6 N., R. 20 E., northwest of four corners, 10 feet west of road, in line of poles; iron post stamped "3071 Wash 1913"	3, 071.180
Cleveland, at intersection of streets at corner of Hotel McCready, in base of telephone pole; spike marked "U. S. 3032 B. M."	3, 031.90
Cleveland, 1.1 miles east of, northeast corner of Van Nostern's ranch barnyard, at corner of fence, in base of telephone pole; spike marked "U. S. 3072 B. M."	3, 071.51
Cleveland, 1.5 miles east of, 10 feet south of road at junction of roads, in base of telephone pole; spike marked "U. S. 3033 B. M."	3, 032.97
Bickleton, 1.3 miles west of, northwest corner of bridge over Pine Creek, in top of beam; spike marked "U. S. 2980 B. M."	2, 979.38

From Bickleton southeast along highways to McCredie.

Bickleton, in school yard, in line of fence due south of building; iron post stamped "3002"	3, 001.896
Bickleton, 1.2 miles southeast of, at northeast corner of intersection of roads, at fence corner, on top of large rock: circle of paint marked "U. S. 2925 B. M."	2, 924.58
Bickleton, 2.1 miles southeast of, at turn in road, 30 feet west of road, in corner of fence, on top of large boulder; circle of paint marked "U. S. 2887 B. M."	2, 886.32
Bickleton, 3 miles southeast of, northwest corner of NE. $\frac{1}{4}$ sec. 35, T. 6 N., R. 20 E., inside of fence corner and 5 feet south; iron post stamped "2853 Wash 1913"	2, 852.184
Bickleton, 4.5 miles southeast of, at oblique turn of road to southeast, 40 feet west of road, in corner of fence, in lower end of brace against post; spike marked "U. S. 2765 B. M."	2, 764.36
Bickleton, 5.5 miles southeast of, 10 feet west of road where it turns south, in base of corner fence post; spike marked "U. S. 2682 B. M."	2, 681.73

Bickleton, 6 miles southeast of, about center of NW. $\frac{1}{4}$ sec. 7, T. 5 N., R. 21 E., at junction of roads, just inside of fence corner south and west of junction; iron post stamped "2638 Wash 1913".....	Feet. 2, 637. 959
Bickleton, 7.6 miles southeast of, at center of sec. 8, T. 5 N., R. 21 E., in base of corner fence post on west side of road; spike marked "U. S. 2498 B. M.".....	2, 497. 33
Bickleton, 8.6 miles southeast of, in line of last fence out, in base of corner fence post east of road; spike marked "U. S. 2395 B. M.".....	2, 394. 22
Bickleton, 9.3 miles southeast of, 10 feet north of east fork, at slight diversion of roads, on top of large angular boulder; circle of paint marked "U. S. 2294 B. M.".....	2, 293. 81
T. 5 N., R. 21 E., near quarter corner between secs. 15 and 22, 10.4 miles southeast of Bickleton, at bend in road, 30 feet north of east-west fence, north side of gate; iron post stamped "2134 Wash 1913".....	2, 133. 689
T. 5 N., R. 21 E., northeast corner of sec. 22, south side of road at intersection of road to south, at fence corner, in base of post; spike marked "U. S. 2085 B. M.".....	2, 084. 78
T. 5 N., R. 21 E., southeast corner of sec. 14, 15 feet north of road, in base of fence post near corner; spike marked "U. S. 1921 B. M.".....	1, 920. 41
T. 5 N., R. 22 E., 50 feet east of southwest corner of sec. 18 (pile of rocks), in line of fence; iron post stamped "1795 Wash 1913".....	1, 795. 106
T. 5 N., R. 22 E., 25 feet west of northeast corner of sec. 19, in base of fence post; spike marked "U. S. 1631 B. M.".....	1, 630. 67
Sixprong, 5.6 miles northwest of, east edge of sec. 20 T. 5 N., R. 22 E., where road passes corner of fence, in base of corner fence post; spike marked "U. S. 1488 B. M.".....	1, 487. 78
Sixprong, 4.5 miles north of, 25 feet east of northwest corner of sec. 22, T. 5 N., R. 22 E., in line of fence, 6 feet south of road; iron post stamped "1364 Wash 1913".....	1, 363. 712
T. 5 N., R. 22 E., near center of sec. 22, 4 miles north of Sixprong, at corner of fence, in base of post; spike marked "U. S. 1251 B. M.".....	1, 250. 26
Sixprong, 2.5 miles north of, opposite Comstock's ranch house, at intersection of roads, 50 feet west of corner and in line of eastward fence, in base of telephone pole; spike marked "U. S. 1107 B. M.".....	1, 106. 18
Sixprong, southwest corner of school yard, northwest corner of sec. 35, T. 5 N., R. 22 E., inside of fence corner; iron post stamped "1018 Wash 1913".....	1, 017. 956
Sixprong, 1 mile south of, northwest corner of sec. 2, T. 4 N., R. 22 E., 15 feet south of east-west fence, 30 feet east of road, in base of telephone pole; spike marked "U. S. 972 B. M.".....	971. 43
Sixprong, 1,000 feet south of store, on top of bench; painted on telephone pole "899".....	898. 72
Sixprong store, 0.3 mile south of, on east side of road at intersection, in base of telephone pole; spike marked "U. S. 873 B. M.".....	872. 95
Sixprong, 2 miles south of, near northwest corner of sec. 14, T. 4 N., R. 22 E., at extreme top of hill, 30 feet east of road, in line of fence near old gate; iron post stamped "1369 Wash 1913".....	1, 368. 393
McCredie, 0.5 mile north of, on bench, 300 feet south of road, on north side of deep canyon, on top of very large basalt boulder; circle of paint marked "U. S. 899 B. M.".....	899. 09
McCredie, 0.3 mile north of, on lower bench, 8 feet east of road, on top of very large angular boulder; circle of paint marked "U. S. 665 B. M.".....	664. 34

From Rock Creek canyon north and east along highways to point 3.4 miles south of Dot.

Rock Creek canyon, 0.9 mile north of railroad at mouth, 40 feet south of road ford, in line of fence on east side of creek, opposite Indian shacks, on top of minor basalt cliff; circle of paint marked "U. S. 246 B. M."	Feet. 245. 18
Rock Creek canyon, 2.3 miles north of railroad bridge, 0.2 mile downstream from Indian Charley's ranch cabin, 20 feet east of road, 200 feet south of fence corner, on top of large rock; circle of paint marked "U. S. 321 B. M."	320. 91
T. 3 N., R. 19 E., near center of sec. 16, 2.6 miles north of mouth of Rock Creek canyon, at bend, 0.2 mile north of Indian Charley's cabin, 150 feet east of road, in line of east-west fence; iron post stamped "364 Wash 1913"	363. 468
Rock Creek canyon, point where Walker Grade leaves Creek road, 30 feet west of intersection, in base of fence post; spike marked "U. S. 433 B. M."	432. 63
Rock Creek canyon, 4.5 miles from mouth, where Walker Grade crosses stream bed, leading to Goodnoe Hills, west side of Rock Creek, 40 feet west of road, at northeast corner of small Indian barn; iron post stamped "423 Wash 1913"	423. 104
Rock Creek canyon, 1.5 miles above Walker Grade crossing, at corner of small fenced grain field, west side of road, in base of fence post; spike marked "U. S. 502 B. M."	501. 30
Rock Creek canyon, 1.5 miles below Squaw Creek bridge, at foot of upgrade to north, 160 feet west of road, on top of large boulder; circle of paint marked "U. S. 593 B. M."	592. 59
Rock Creek canyon, junction of Rock and Squaw creeks, 800 feet south of Squaw Creek bridge, 700 feet north of Moser's ranch house, adjacent to northeast corner of field, 5 feet west of road; iron post stamped "641 Wash 1913"	640. 98
Squaw Creek canyon, 1 mile above Goldendale Road bridge, middistance of fenced pasture, 15 feet west of road, on top of large boulder, marked "U. S. 769 B. M."	769.03
Newell's ranch house, 0.4 mile west of, in gully, where dim road turns off to north up Squaw Creek, 15 feet north of road; top of rock marked "832"	831. 73
Newell's ranch house, 300 feet south of, on hillside, 50 feet above, 30 feet south of turn in Dot road, in base of large corner fence post; spike marked "U. S. 1110 B. M."	1, 109. 97
T. 4 N., R. 19 E., near center of NW. $\frac{1}{4}$ sec. 16, on Dot-Goldendale road, top of first hill east of Newell's ranch, 1.7 miles west of Wood's ranch, 15 feet north of road, in line of wire fence; iron post stamped "1713 Wash 1913"	1, 712. 253
Wood's ranch, 0.6 mile west of, at turn in road. 8 feet south of road, on side of hill, in base of corner fence post; spike marked "U. S. 2037 B. M."	2, 036. 31
Oak Grove School, 400 feet east of, opposite Wood's ranch orchard, 10 feet north of road, on top of sawed-off butt on south side of large oak tree; spike marked "U. S. 2347 B. M."	2, 346. 88
T. 4 N., R. 19 E. near northwest corner of sec. 23, 0.5 mile east of Oak Grove School, 20 feet west of fence corner and section line, on north side of road; iron post stamped "2548 Wash 1913"	2, 547. 325
T. 4 N., R. 19 E., northwest corner of sec. 24, on south side of road, in base of corner fence post; spike marked "U. S. 2597 B. M."	2, 596. 46
T. 4 N., R. 20 E., southwest corner of sec. 18, 10 feet east of corner, in base of fence post; spike marked "U. S. 2504 B. M."	2, 503. 28

ASOTIN QUADRANGLE.

[Latitude 46°-46° 30'; longitude 117°-117° 30']

From Pullman along highway southwest to Wawawai, thence southeast via Steptoe Canyon to Uniontown (part of line).

Primary leveling in 1903 by E. M. Fry.

Quast ranch, 200 feet north of house, 0.2 mile east of Snake River, 100 feet east of county road, in large boulder; bronze tablet stamped "748 S"... Feet. 746.714

From Wawawai along highway by circuitous route via Offield Canyon, Kirby School, and Alpowa to Steptoe Canyon (part of line). (Readjusted with 1915 levels.)

Swenney ranch, 0.5 mile east of house, 20 feet northwest of road forks of Lewiston-Pomeroy stage road and road down Dead Man Gulch, inside fence corner; highest point of stone 10 by 8 by 6 inches..... 2,516.19
 Fanning ranch, 0.5 mile west of, at summit of divide between Alpowa and Pataha creeks, 50 feet south of forks of Pomeroy and Watertine roads, south side of road near mail box; iron post stamped "2610 S." (Recovered 1915 by D. S. Birkett, value by Birkett=2610.474)..... 2,608.232
 Alpowa post office, 15 feet north of, in yard of A. E. Lee's ranch, 3 feet west of front gate, 100 feet south of north fork of Alpowa Creek; iron post stamped "1322 S"..... 1,320.277
 Alpowa Canyon, 50 feet south of old house of Walker ranch, 150 feet north of creek, north side of road, in root of large poplar tree; spike..... 1,067.0
 Alpowa Ferry, 1,000 feet west of landing, west side of Snake River, 100 feet northeast of house, 200 feet west of warehouse, south side of road, at corner of fence; iron post stamped "720 S"..... 718.048
 Pate ranch, 1,000 feet north of house, 20 feet north of creek, in solid rock wall, at north side of road; bronze tablet stamped "1208 S"..... 1,207.351

From point 2.2 miles east of Pataha City east along highway to point near Fanning ranch (Unadjusted line; see next page.)

Primary leveling in 1915 by D. S. Birkett.

Pataha City, 2.9 miles east of, 300 feet east of fork of Lewiston road and road leading up Pataha Valley, south edge of former road near fence corner; iron post stamped "2284 Wash. 1915" (P.B.M. 45)..... 2,284.043
 Fork of Lewiston road and road up Pataha Valley, 840 feet east of top of south side of concrete stock subway under road; chiseled square..... 2,311.08
 T. 11 N., R. 43 E., sec. 6, almost opposite James Kern place, concrete bridge, south side of, top of balustrade; chiseled square..... 2,488.82
 T. 11 N., R. 43 E., near quarter corner between secs. 5 and 6, T road to northwest, south side of road, telephone pole; spike marked "2554".... 2,554.63
 T. 11 N., R. 43 E., near quarter corner between secs. 4 and 5, T road south, east side of road, telephone pole; spike marked "U.S. 2652 B.M."..... 2,651.91
 T. 11 N., R. 43 E., near quarter corner between secs. 3 and 4, forks of Lewiston road and Deadman Gulch road, 40 feet northeast of telephone pole; spike marked "U.S. 2520 B.M."..... 2,520.53
 Summit of divide between Alpowa and Pataha creeks, on Lewiston-Pomeroy road, 0.5 mile west of, T road south, southwest corner telephone pole; spike marked "U.S. 2580 B.M."..... 2,579.84
 Fanning ranch, 0.5 mile west of, at summit of divide between Alpowa and Pataha creeks, 50 feet south of forks of Pomeroy and Valentine roads, south side of road, near mail box; post stamped "2610 S" (Bull. 557, value 2,611.033 discarded)..... 2,610.474

From point 2 miles west of Fanning ranch north to point near Kirby School. (Based upon unadjusted line from west.)¹

T. 12 N., R. 43 E., near the southwest corner of sec. 34, 250 feet south of gate leading to house on Mrs. Thomas McKearnan's place, west side of road, telephone pole; spike marked "U.S. 2453 B.M.".....	Feet. 2,453.41
T. 12 N., R. 43 E., near southwest corner of sec. 27, concrete bridge over Deadman Creek, east side of, top of guardrail; bronze tablet stamped "2406 Wash. 1915" P.B.M. No. 46.....	2,405.937

BACON QUADRANGLE

[Latitude 47° 15'-47° 30'; longitude 119° 15'-119° 30']

From Moses Lake west along highway to Ephrata.

Primary leveling in 1903 by R. A. Farmer and R. B. Shaw and in 1909 by C. H. Semper.

Moses Lake, 2.9 miles north of, 10 feet west of road, in granite outcrop; tablet stamped "1089 T".....	1,089.199
Moses Lake, 6.0 miles north of, 8 feet southwest of road, in 2 by 2 foot boulder 1 foot above ground; tablet stamped "1274 T".....	1,274.199

From point 4 miles southeast of Ephrata southeast and north along highway to Great Northern Ry. (part of line).

Ephrata, 6.0 miles south of, on road down east side of Moses Lake, west margin of road; top of large rock marked "U. S. □ B. M. 1130".....	1,130.15
T. 21 N., R. 27 E., southwest corner of sec. 33, 7.0 miles south of Ephrata; iron post stamped "1066".....	1,066.625
Gibbons ranch, 1.0 mile north of, on west margin of road; top of rock marked "U. S. □ B. M. 1069".....	1,069.38
Crab Creek, Joe Ogen ranch, about 800 feet northwest of house, at corner of wire fence; iron post stamped "1071".....	1,070.993
Crab Creek, at angle in road, opposite ranch house and sheep pens, west side of road; top of large rock marked "U. S. □ B. M. 1079".....	1,079.93
Crab Creek, 1.6 miles south of railroad, on east side of road; top of large rock marked "U. S. □ B. M. 1124".....	1,124.30
Milepost 1596, 4 feet east of; iron post stamped "1251 T".....	1,251.974

From Adrian south along highway toward Moses Lake (spur line; elevations unreliable).

Milepost 1590, 4 feet east of; iron post stamped "1188 T".....	1,188.534
Adrian, 2.8 miles south of, 30 feet south of Cowell ranch house at corner of chicken yard; iron post stamped "1210".....	1,210.478
Adrian, 3.6 miles south of, at north end of small coulee on west side; top of rock marked "U. S. □ B. M. 1173".....	1,174.38
Adrian, 4.7 miles south of, 1,200 feet south of G. M. Walher house, 100 feet north of wire fence; top of outcrop marked "U. S. B. M. 1165".....	1,165.01

From point near Ephrata northeast along Great Northern Ry. to Adrian.

Milepost 1596, 4 feet east of; iron post stamped "1251 T".....	1,251.974
Milepost 1593, 4 feet east of; iron post stamped "1233 T".....	1,233.300
Milepost 1590, 4 feet east of; iron post stamped "1188 T".....	1,188.534

From Adrian east along Great Northern Ry. to Stratford.

Milepost 1587, 4 feet east of; iron post stamped "1252 T".....	1,252.438
Stratford, 5 feet west of milepost 1584; iron post stamped "1277 T".....	1,277.453

¹The old line from Fanning's ranch to Kirby School was leveled three times and a foot error found, and from Kirby School to Richardson ranch was leveled twice and 0.5 foot error found. This necessitated readjustment of an old circuit on Asotin and Pullman quadrangles.

From Adrian north along Northern Pacific Ry. to Coulee City (part of line).

Milepost 18, 12 feet north of, 20 feet west of track; iron post stamped "1351 T".....	Feet. 1,352.145
Milepost 15, 100 feet north of, east of track; iron post stamped "1489 T" ..	1,489.714
Sunbath, 400 feet south of section house, 30 feet west of track; iron post stamped "1522 T"	1,522.811

BEVERLY QUADRANGLE.

[Latitude 46° 45'-47°; longitude 119° 45'-120°.]

From southwest corner of sec. 32, T. 18 N., R. 24 E., south along highway to Beverly.

Primary leveling in 1909 by C. H. Semper and in 1913 by D. S. Birkett.

T. 17 N., R. 24 E., northwest corner of sec. 20; iron post.....	1,326.684
T. 17 N., R. 24 E., southwest corner of sec. 32; iron post.....	1,072.183
T. 16 N., R. 24 E., center of east side of SW. $\frac{1}{4}$ sec. 6, in fence post; spike marked "1210"	1,210.89
T. 16 N., R. 24 E., northwest corner of sec. 18; iron post.....	1,174.823

From southwest corner of sec. 34, T. 18 N., R. 24 E., south and east along highway to Low Gap, thence south and west to northwest corner of sec. 22, T. 17 N., R. 24 E.

T. 17 N., R. 24 E., southwest corner of sec. 2; iron post.....	1,274.470
T. 17 N., R. 25 E., southwest corner of sec. 6; iron post stamped "1209" ..	1,209.680
T. 17 N., R. 24 E., southwest corner of sec. 24; iron post stamped "1170" ..	1,169.952
T. 17 N., R. 24 E., southeast corner of sec. 28; iron post stamped "1076" ..	1,076.290

From near Jericho west along Chicago, Milwaukee & St. Paul Ry. to Cohasset.

Jericho, 1.0 mile east of, 30 feet north of track, 7 feet west of telegraph pole; iron post stamped "522"	522.295
Jericho, in front of station; top of rail.....	526.1
Jericho, 460 feet west of station sign, 8 feet north of track, in rock cut, top of rock; marked "U. S. \square B. M. 527"	527.41
Jericho, 2.0 miles west of, 170 feet west and north of cabin, 10 feet north of track; iron post stamped "528"	528.604
Beverly, at Chicago, Milwaukee & St. Paul Ry. station, 20 feet west of water tank, 12 feet south of main track; iron post.....	546.790
Beverly, at extreme west end of railroad trestle over Columbia River, top of bent, south side of track; railroad spike marked "561"	561.81
Cohasset, 300 feet east of west end of sidetrack, 30 feet south of track; iron post.....	770.117

From Bend north along road to Beverly.

Bend, 1.4 miles northeast of, 30 feet north of road; spike in base of corner fence post, marked "U. S. 519 B. M."	518.80
T. 15 N., R. 23 E., 60 feet south of northwest corner of NE. $\frac{1}{4}$ sec. 22, in line of fence of Rush ranch, 300 feet west of ranch house; iron post stamped "515 Wash 1913"	515.137
Beverly, 3 miles downstream from, on roadway cut in side of rock cliff, opposite and 0.3 mile downstream from concrete power house; point in circle of paint on solid rock, marked "U. S. 506 B. M."	505.90
Beverly, 1.7 miles south of, north approach to bridge over Crab Creek, east side and in top of concrete pier; aluminum tablet stamped "510 Wash 1913"	509.278
Beverly, at Chicago, Milwaukee & St. Paul Ry. station, 20 feet west of water tank, 12 feet south of main track; iron post stamped "546" (Engineers' elevation 546.87).....	546.790

United States Engineers' bench mark.

Beverly, 1.7 miles south of, 300 feet north of mouth of Crab Creek, 150 feet west of Steal's house; spike in base of pile (U. S. Engineers' b. m.)..... Feet. 493.79

BLAINE QUADRANGLE

[Latitude 48° 45'-49°; longitude 122° 30'-122° 45'.]

From Fairhaven along Great Northern Ry. to Blaine, thence east along highway to Delta.

Primary leveling in 1905 by G. C. Jacobs.

T. 38 N., R. 2 E., sec. 13, on north side of road east of Great Northern Ry., at intersection of rights of way; iron post stamped "107 B".....	107.414
Ferndale, north of road, 15 feet east of wooden approach to bridge over Nooksack River, sec. 29, T. 39 N., R. 2 E.; iron post stamped "26 B".....	26.675
Enterprise, sec. 7, T. 39 N., R. 2 E., in road crossing west of track, 480 feet north of platform; iron post stamped "70 B".....	70.772
Custer, 1.0 mile south of, in northeast angle of road opposite Brown barn; iron post stamped "64 B".....	64.933
T. 40 N., R. 1 E., secs. 26 and 27, 1.1 miles northwest of Custer, west of road, 50 feet north of track, road between sections; iron post stamped "48 B".....	49.110
Blaine, sec. 6, T. 40 N., R. 1 E., in stone step on north side of main entrance to Blaine Hotel; aluminum tablet stamped "41 B".....	41.499
T. 40 N., R. 1 E., sec. 3, 750 feet east of entrance to J. McGrath's place, in southwest angle of forks of road; iron post stamped "452 B".....	452.909
T. 40 N., R. 2 E., secs. 5 and 6, 1,000 feet west of entrance to Crawford place, on south side of road, 1 foot north of east-west fence, 38 feet east of center of road between sections; iron post stamped "180 B".....	180.465
Delta, at end of north road, in southwest angle of forks; iron post stamped "124 B".....	124.555

From Ferndale along road to point 2 miles west.

Ferndale, 1.1 miles west of, Pearson triangulation station; bronze tablet stamped "276 B".....	276.596
Ferndale, 2.0 miles west of, in southwest angle of crossroads; iron post stamped "188 B".....	188.439

BLALOCK ISLAND QUADRANGLE.

[Latitude 45° 30'-46°; longitude 119° 30'-120°.]

From Castlerock west along Spokane, Portland & Seattle Ry. to McCredie (2 lines).

Primary leveling in 1906 by John R. Evans and in 1913 by D. S. Birkett.

Castlerock, in NW. $\frac{1}{4}$ sec. 8, T. 4 N., R. 24 E., north bank of river, opposite rock 100 feet north of river, 30 feet north of shack at ferry landing; aluminum tablet stamped "247".....	248.299
Carley, 1 mile east of station, 8 feet south of track, in base of mail crane; bolthead marked "U. S. 251 B. M.".....	251.59
Klickitat-Benton county line, at intersection of; top of rail.....	251.4
Carley, 0.7 mile west of, 175 feet east of milepost 163, 80 feet north of railroad track, 8 feet north of road, in large basalt boulder in through cut; aluminum tablet stamped "252 Wash 1913".....	252.207
Alderdale, 200 feet east of warehouse, north side of track, in base of telegraph pole; spike marked "U. S. 249 B. M.".....	249.33
Alderdale, 0.2 mile west of, west end on north side of bridge 162 O, on top of concrete abutment; chiseled square.....	246.15

Alderdale, 1.4 miles west of, 450 feet east of milepost 161, 35 feet north of track, on top of large basalt boulder; circle of paint marked "U. S. 248 B. M."	Feet. 248. 65
Alderdale, 2.1 miles west of, 0.2 mile east of milepost 160, opposite track from steep rocky draw in hillside, 30 feet south of track, in large basalt boulder 2 feet high; aluminum tablet stamped "248 Wash 1913"	248. 376
McCredie, 1.1 miles east of, 15 feet due west of milepost 159, 20 feet north of track, on top of basalt boulder; circle of paint marked "U. S. 248 B. M."	248. 09
McCredie, 0.4 mile east of, 30 feet north of track and 15 feet east of road at road crossing, on top of large boulder; circle of paint marked "U. S. 246 B. M."	246. 40
From Milepost 177 north by road crossing river to Paterson, thence to mouth of Glade Creek and northwest to Dead Canyon 9 miles north of Carley, thence south to Carley, thence across river to Castlerock.	
T. 5 N., R. 26 E., southwest corner of sec. 10, 1.7 miles east of Paterson, 160 feet south of railroad embankment, east edge of road; iron post stamped "263"	264. 173
T. 5 N., R. 25 E., NE. $\frac{1}{4}$ sec. 13, unsurveyed, 1.77 miles west of Paterson, 100 feet south of center of railroad embankment, 250 feet north of road, in firm rock on rocky point; aluminum tablet stamped "267"	267. 998
T. 5 N., R. 25 E., about sec. 21, unsurveyed, 5.21 miles west of Paterson, 100 feet south of railroad cut, 30 feet north of road, in firm rock; aluminum tablet stamped "260"	261. 419
T. 5 N., R. 25 E., about sec. 30, unsurveyed, 8.41 miles west of Paterson, 0.3 mile east of high hill, on ridge, in large boulder; aluminum tablet stamped "622"	623. 615
T. 5 N., R. 24 E., about sec. 16, unsurveyed, 6.04 miles east of Carley-Prosser road, on flat; iron post stamped "483"	484. 115
T. 5 N., R. 24 E., about northeast corner of sec. 18, unsurveyed, 4 miles east of Carley-Prosser road, on round knoll, 600 feet north of Dead Canyon, in firm granite rock, near a rock mound; aluminum tablet stamped "576" ..	577. 122
T. 5 N., R. 23 E., east side of SE. $\frac{1}{4}$ sec. 10, 6.94 miles north of Carley, 500 feet north of Hansen's store, 25 feet west of road; iron post stamped "734" ..	735. 205
T. 5 N., R. 23 E., north side of NW. $\frac{1}{4}$ sec. 26, 4.6 miles north of Carley, 2.3 miles south of Hansen's store, 20 feet west of road, on fence line; iron post stamped "656"	657. 294
T. 4 N., R. 23 E., W. $\frac{1}{4}$ sec. 1, 1.77 miles northwest of Carley; east of summit, 20 feet north of road; iron post stamped "705"	706. 294
Castlerock, T. 4 N., R. 24 E., NW. $\frac{1}{4}$ sec. 8, north bank of river, opposite rock, 100 feet north of river, 30 feet north of shack at ferry landing; aluminum tablet stamped "247"	248. 299
From mouth of Glade Creek north and east by road to point 3.6 miles northwest of Irrigon triangulation station, thence east and south to point 1.7 miles east of Paterson.	
T. 5 N., R. 25 E., 3.3 miles northeast of sec. 9, unsurveyed, 20 feet east of Prosser-Glade road, in east fork of Glade Canyon; iron post stamped "362" ..	363. 247
T. 6 N., R. 25 E., about sec. 35, unsurveyed, 5.92 miles northeast of Glade, 20 feet east of Prosser-Glade road; iron post stamped "511"	512. 336
Irrigon triangulation station, T. 6 N., R. 26 E., NW. $\frac{1}{4}$ sec. 34, 3 miles north of Holmes ranch, on high ridge 0.25 mile east of Prosser-Irrigon road; iron post stamped "738"	739. 727

From point 9 miles north of Carley north 1 mile, thence north 2 miles to southwest corner of sec. 7, T. 6 N., R. 24 E.

T. 6 N., R. 23 E., 30 feet southeast of northwest corner of sec. 35, 13 miles north of Carley, at crossroads; iron post stamped "793"	Feet. 794.222
T. 6 N., R. 23 E., northeast corner of sec. 25, 10.1 miles north of Carley, 500 feet west of intersection of two roads, 30 feet west of section corner, west edge of road; iron post stamped "865"	866.278

From point 9 miles north of Carley northwest to southeast corner of sec. 11, T. 6 N., R. 22 E.

T. 6 N., R. 23 E., north side of sec. 29, 3 miles west of Carley-Prosser road, at intersection of two gulches, 500 feet west of school-house, in rocky point, in firm rock; aluminum tablet stamped "990"	990.769
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CAPE ELIZABETH QUADRANGLE (INCLUDES PART OF OCOSTA 15' QUADRANGLE.)

[Latitude 47°-47° 30'; longitude 124°-124° 30']

From point 2.8 miles west of Grays Harbor City north along Northern Pacific Ry., thence south along highways to point 3 miles north of Damon Point.

Primary leveling in 1911 by G. L. Hagman.

Grays Harbor City, 2.8 miles northwest of, opposite milepost 13, on east side of railroad; spike in base of telephone pole, aluminum tag stamped "9 13"	8.61
Grays Harbor City, 3.9 miles northwest of, 180 feet south of milepost 14, 320 feet north of end of bridge over Grass Creek, at east edge of right of way, in fence corner; iron post stamped "6 Wa 1911"	6.297
Gray Gables, in front of station; top of rail	12.34
Chenois Creek, 1 mile south of, opposite milepost 15; spike in base of telephone pole, aluminum tag stamped "15 14"	15.12
Chenois Creek, 120 feet south of station, opposite milepost 16; spike in base of telephone pole, aluminum tag stamped "11 15"	11.40
Chenois Creek, 1 mile north of; spike in milepost 17, 1 foot above ground, aluminum tag stamped "7 16"	7.04
Burrows, 30 feet south of station, 12 feet west of center of track, on station fill; iron post stamped "17 Wa 1911"	17.402
Tulips, opposite station; spike in base of telephone pole, painted and scribed "U. S. B. M. 17"	16.74
Tulips, at railroad crossing; top of rail	20.13
Newton, at railroad crossing; top of rail	23.19
Newton, 0.3 mile north of, where road bends west; spike in base of fence post, painted and scribed "U. S. B. M. 19"	18.59
Wilderness, at railroad crossing; top of rail	39.42
Wilderness, 0.4 mile north of, bridge over Humptulips River, in top of southeast pier; aluminum tablet stamped "37 Wa 1911"	37.130
Copalis Crossing, 0.6 mile east of station, on south side of road, at T road north; spike in base of stump, painted and scribed "U. S. B. M. 75"	75.47
Copalis Crossing, 0.5 mile west of where abandoned road turns off south, on north side of road; spike in base of stump, painted and scribed "U. S. B. M. 71"	70.93
Copalis Crossing, 1.4 miles west of, on south side of road; spike in base of stump, painted and scribed "U. S. B. M. 176"	175.60
Copalis Crossing, 1.7 miles west of, north side of road, near top of Langley Hill; spike in base of short stump, painted and scribed "U. S. B. M. 203"	202.63

Copalis Crossing, 1.7 miles west of, about 250 feet south of road, on top of wooded hill on which is situated Coast and Geodetic Survey triangulation station "Langley." in rock about 2 inches above ground under observation tower; brass tablet, stamped "257" (C. & G. S. triangulation point)...	Feet. 256.666
NOTE.—Bench mark is set on checked spur line.	
Copalis, 2.2 miles east of, on north side of road; spike in base of stump, painted and scribed "U. S. B. M. 54".....	53.66
Copalis, 1.2 miles east of, 0.2 mile west of place where road bends south and private road goes north, north side of road; spike in base of stump, painted and scribed "U. S. B. M. 40".....	40.00
Copalis, 0.25 mile east of, near top of rise, south side of road; spike in base of large stump, painted and scribed "U. S. B. M. 42".....	41.58
Copalis School, in northwest corner of yard; iron post stamped "24 Wa 1911".....	23.621
Copalis, 1 mile south of, on beach, near first shack south of Copalis; spike in base of corner fence post, painted and scribed "U. S. B. M. 16".....	16.14
Copalis, 2.1 miles south of, on beach among drift; spike in base of big stump, painted and scribed "U. S. B. M. 9".....	9.46
Copalis, 2.5 miles south of, north end of gate to private road leaving beach, near new shed; spike in base of fence post, painted and scribed "U. S. B. M. 17".....	16.75
Copalis, 3.6 miles south of, on high bank where beach is crossed by Thompson Creek, marked by camp site; spike in base of small spruce tree near temporary shack, painted and scribed "U. S. B. M. 28".....	28.49
Copalis, 4.9 miles south of, on small knoll, at brush line opposite two hunting tripods on beach, 160 feet south of Axtell cabin, 45 feet south of blazed spruce tree (site marked by black and white flag on pole); iron post stamped "20 Wa 1911".....	20.116
Copalis, 6.1 miles south of, on beach opposite house; spike in base of 10 by 10 inch post, painted and scribed "U. S. B. M. 7".....	6.86
Copalis, 7.6 miles south of, on beach; copper nail in root of big tree stump, painted and scribed "U. S. B. M. 9".....	8.58
Copalis, 8.1 miles south of, on Oyhut road, about 1,400 feet east of beach, north side of road, 9 feet west of blazed spruce tree, painted and scribed "B. M. (—→)"; iron post stamped "19 Wa 1911".....	18.676
Copalis, 9.1 miles south of, just inside of drift line, the third from one farthest south of a line of fence posts; spike in base of fence post, painted and scribed "U. S. B. M. 12".....	12.25
Copalis, 9.9 miles south of, just inside of drift line; spike in base of northeast corner of white hunting tower, painted and scribed "U. S. B. M. 11".....	11.41
Copalis, 11.2 miles south of, about 0.9 mile north of Walker cabin, about 1 mile northeast of hunting tripod on beach; spike in base of small spruce tree, painted and scribed "B. M. 11" (to spruce tree is nailed a tall pole with black and white flag).....	10.73

CEDAR LAKE QUADRANGLE.

[Latitude 47°-47° 30'; longitude 121° 30'-122°.]

From Ravensdale along Northern Pacific Ry. to Hot Springs.

Precise leveling by the U. S. Coast and Geodetic Survey.

Ravensdale, 1.9 kilometers west of, on Northern Pacific Ry. concrete arch culvert 1 A, 3 meters north of track, in upper surface at northeast corner, 0.35 meter from east and 0.1 meter from north edge of culvert; copper bolt (C. & G. S. "R").....	576.602
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Ravensdale, 60 meters west of station, 20 meters south of main track, 0.6 meter east of railway section house; bottom of square hole in top of granite post, marked "U. S. \square B. M." (C. & G. S. "S").....	Feet. 618.611
Ravensdale, 1.7 kilometers east of, on Northern Pacific Ry. concrete arch culvert 1 L over Beaver Creek, 4.3 meters south of railway track, in upper surface of culvert, 0.157 meter from east and 0.15 meter from south edge; copper bolt marked " $\frac{U|S}{B|M}$ " (C. & G. S. "T").....	651.160
Ravensdale, 3.2 kilometers east of, on concrete arch culvert near mile pole 215, 2.5 meters north of Northern Pacific Ry. track, in upper surface of culvert, 0.15 meter from west and 0.15 meter from north edge; copper bolt marked " $\frac{U|S}{B|M}$ " (C. & G. S. "U").....	705.372
Kanaskat and Palmer Junction, between, about 50 meters east of milepole 211, in top of concrete abutment for approach at west end of Northern Pacific Ry. bridge over Green River, the tenth crossing over that stream, 0.17 meter from east and 0.11 meter from south edge, 1.5 meters south of nearest rail; copper bolt marked " $\frac{U|S}{B|M}$ " (C. & G. S. "V").....	847.944
Palmer Junction, 90 meters west of station, 2 meters south of line of telegraph poles, 9.19 meters south of nearest rail on Tacoma branch of Northern Pacific Ry.; bottom of square hole in top of granite post marked "U. S. \square B. M." (C. & G. S. "W").....	858.230
Palmer Junction, 4 kilometers east of, 6 meters east of tunnel 8, 3 meters north of bridge 211 over Green River, in natural rock; copper bolt (C. & G. S. "X").....	932.268
Eagle Gorge, 0.8 kilometer west of, on south end of east concrete abutment of bridge 209 over Green River, in top of abutment, 0.15 meter from its west edge, 1.55 meters from rail; copper bolt marked " $\frac{U|S}{B|M}$ " (C. & G. S. "Y").....	1,080.224
Canton, 60 meters east of station, in section-house yard, 12.2 meters south of section house, 9.7 meters north of nearest main track rail; bottom of square hole in top of granite post, marked "U. S. \square B. M.".....	1,204.604
Hot Springs, in lawn of Kloeber Hotel, 10 meters east of walk leading to station, 3 meters south of south porch of hotel; bottom of square hole in top of granite post, marked "U. S. \square B. M." (C. & G. S. "A ₁ ").....	1,518.291
Hot Springs, 1.85 kilometers east of, in top of retaining wall for east concrete abutment of bridge 201, 0.3 meter from east, and 1.65 meters from north edge, 1.3 meters north of rail; red metal disk (C. & G. S. "B ₁ ")....	1,573.474

From Buckley along Northern Pacific Ry. to Palmer Junction.

Precise leveling by H. S. Crowe in 1898.

Enumclaw, 77.9 feet west of southwest corner of station, 3.1 feet east of mail crane, 31 feet west of center line of Griffin Avenue; iron post stamped "742 T".....	742.144
Enumclaw, in front of station; top of rail.....	742.0
Veazie, 76.6 feet from main track, 15 feet from center of side track, on north side of main line, 50 feet east of road crossing; iron post ¹ stamped "777 T".....	777.478
Palmer, 96.4 feet west of southwest corner of station, 5 feet west of mail crane, 10.4 feet from center of track, 20 feet west of center of road crossing; iron post stamped "882 T".....	882.328

¹ Could not be found in 1911.

From Palmer southeast along Northern Pacific Ry. to Hot Springs.

Green River, sixth crossing, 25 feet west of tunnel 7, on north corner of east bulkhead pier of steel bridge 210; copper bolt stamped "1046 T"...	Feet. 1, 046.721
Canton, in front of station; top of rail.....	1, 203.7
Canton, 8.2 feet east of east end of railroad toolhouse, 2 feet west of telegraph pole; iron post stamped "1205 T".....	1, 206.113
Maywood, 2.2 feet east of southeast corner of section house, 4.1 miles east of Canton; iron post stamped "1335 T".....	1, 336.031
Hot Springs, 56 feet east of southeast corner of station, 17.6 feet north of center of track, 3 feet west of telegraph pole; iron post stamped "1531 T".....	1, 532.139
Hot Springs, in front of station; top of rail.....	1, 930.6

From point near Kanaskat north along Northern Pacific Ry. to point near Barneston, thence along Chicago, Milwaukee & St. Paul Ry. to point 1 mile east of Rainy Creek.

Primary leveling in 1910 by D. S. Birkett.

Kanaskat and Palmer Junction, between, about 50 meters east of milepost 211, at west end of Northern Pacific Ry. bridge over Green River, 0.2 meter from east edge and 0.1 meter from south edge, 1.5 meters from nearest rail, in top of concrete abutment for approach; copper bolt (C. & G. S. b. m.).....	847.944
Kangley Junction, 50 feet west of Northern Pacific Ry. tracks, 40 feet north of intersection of tracks; spike in 2-foot maple tree.....	943.90
Kangley, on Kerriston branch of Northern Pacific Ry., 35 feet north by 50 feet east of railroad station, corner of fence on north side of wagon road crossing railroad; iron post stamped "958 Wash".....	957.517
Cedar River bridge on Kerriston branch of Northern Pacific Ry., 1.2 miles southwest of, 1.6 miles southwest of Barneston, 10 feet east of track, on top of 2½ by 2½ by 2 foot granite boulder; point marked "U. S. 893 B. M.".....	892.57
Iolanthe siding, 1,000 feet east of east end of, 4.3 miles west of Moncton, east end and on north side of track, in concrete abutment of steel bridge FF 124; aluminum tablet stamped "Prim. Trav. Sta. No. 9, 799, Wash, 1910".....	798.990
Moncton, 1 mile west of, Chicago, Milwaukee & St. Paul Ry. steel bridge FF 120 over Cedar River, north side of track, 5 inches from north and west edges, in top of concrete abutment; aluminum tablet stamped "920 Wash".....	920.353
Moncton, 1.3 miles east of, point where county road from North Bend to Cedar Lake crosses the Chicago, Milwaukee & St. Paul Ry. (main line), 20 feet east of road and 30 feet south of railroad track; iron post stamped "1041 Wash".....	1, 041.480
Chenge Creek bridge, 2.4 miles west of Garcia (bridge FF 112), east end of, on concrete abutment north side of track, at west end of the long abutment near where the steel structure of the bridge joins on; bronze tablet stamped "1455 Wash".....	1, 455.241
Garcia, 740 feet east of station, wall of rock through cut, 15 feet north of track; aluminum tablet (placed nearly vertical) stamped "Prim. Trav. Sta. No. 10, 1669, Wash., 1910".....	1, 669.168
Rock Creek, 2.8 miles east of Garcia, west end of filled trestle over creek, at end of cut, 50 feet south of railroad track; iron post stamped "1884 Wash".....	1, 884.152

¹ Bench mark found loose in 1904; reset in concrete.

Bandera, 20 feet west of telephone booth (no station house), 30 feet south of track, in knuckle at base of 2½-foot cedar stump 6 feet high; copper nail, aluminum tag stamped "2123"	Feet. 2, 123. 46
Hanson Creek bridge (steel) FF 88, 0.6 mile east of Bandera, east end of bridge, in concrete abutment north side of track and at west end, 2 feet from point where steel structure joins on top of concrete; aluminum tablet stamped "2167 Wash"	2, 167. 666

From point near Barneston north along Kerriston branch of Northern Pacific Ry. via Kerriston to point 2 miles southeast of Preston.

Barneston, 3 miles north of 0.4 mile east of milepost 9, 40 feet west of south end of trestle No. 8; iron post stamped "1074 Wash"	1, 073. 733
Taylor, 1.5 miles east of, 5.1 miles north of Barneston, junction of old skid road (trail to Taylor) with Northern Pacific Ry., 30 feet west of railroad, south side of skid road; iron post stamped "1327 Wash"	1, 327. 036
Kerriston, 0.3 mile south of station, 420 feet south of point where switch-back of Northwest Lumber Co.'s logging railroad leaves the Northern Pacific Ry., 10 feet west of Northern Pacific tracks, 25 feet east of logging railroad, in knuckle at base of 5-foot cedar stump 10 feet high; copper nail, aluminum tag stamped "1374"	1, 374. 00
Kerriston, 650 feet north of Northwest Lumber Co.'s mill, 700 feet south of head office, 100 feet east of logging railroad, 25 feet northeast of black-smith shop, in niche on granite boulder 15 feet high and 18 feet in diameter, 3 feet above ground; aluminum tablet stamped "1214 Wash"	1, 213. 832
Kerriston, 2.8 miles north of, 15 feet west of Northern Pacific Ry., at base of 3½-foot cedar stump 10 feet high; spike, aluminum tag stamped "1094" ..	1, 093. 87
Kerriston, 3.3 miles north of Northwest Lumber Co.'s mill, 250 feet north of junction of logging road with Northern Pacific Ry., 25 feet west of Northern Pacific tracks, 18 feet east of logging tracks; iron post stamped "1045 Wash"	1, 044. 778
Kerriston, 4 miles northwest of point where logging railroad divides, one spur leads to northwest and main line turns to south to logging camp, 30 feet west and 20 feet north of junction, 120 feet west of tool house, in base of hemlock tree; spike, aluminum tag stamped "936"	935. 95

From point 1.5 miles east of Taylor west along skid road and Pacific Coast R. R. to point 1.4 miles west of Hobart.

Taylor, 50 feet east of Pacific Coast R. R. station, 50 feet north of railroad, 5 feet west of fence about hotel lawn; iron post stamped "1159 Wash" ..	1, 158. 666
Walsh, southeast corner of school yard, 50 feet east of Pacific Coast R. R., 50 feet north of county road; iron post stamped "767 Wash"	766. 998
Hobart, 90 feet west of Pacific Coast R. R. station, 4) feet north of saloon, 45 feet south of railroad track, west edge of county road; iron post stamped "549 Wash"	549. 319

From Henrys switch on Northern Pacific Ry. to point about 1 mile west of Ravensdale

Henrys switch, 900 feet west of, 2 miles west of Ravensdale, in top of concrete pier for steel bridge of Columbia & Puget Sound R. R. over Northern Pacific Ry., south side of latter and west side of former tracks, northwest corner of pier; point marked by circle inclosing cross and "U. S. 564 B. M."	564. 65
Ravensdale, 1.9 kilometers west of, north side of Northern Pacific Ry., in top of concrete arch of culvert, at northeast corner; copper bolt (C. & G. S. B. M.)	576. 586

From point 1.3 miles east of Moncton along road to Cedar Lake and return (checked spur line).

Moncton, 1 mile east of, on wagon road from Moncton to new dam site, Cedar Lake, junction with North Bend road, 90 feet west of, north side of road, in base of hemlock tree, nail marked with ring of red paint; aluminum tag stamped "1237" (city of Seattle bench mark).....	Feet. 1, 237.02
Cedar Lake, 150 feet east of north side of new dam site, 50 feet south of wagon road from new dam to old dam, 65 feet east of bunk house 1, embedded in concrete block, a truncated pyramid in shape, 4 feet square at base and 1 foot square at top, 4 feet high, buried level with surface of ground, post extends 1 foot above concrete; iron post stamped "1605" ..	1, 604.884
Cedar Lake; surface of water November 11, 1910.....	1, 558.2

CHEHALIS QUADRANGLE.

[Latitude 46° 30'-47°; longitude 122° 30'-123°.]

From Roy southwest along Northern Pacific Ry. to Tenino, thence north along Northern Pacific Ry. to Tumwater Bridge.

Primary leveling in 1912-13 by E. M. Bandli.

Roy, 540 feet south of station, 21 feet east of track, 10 feet north of road at road crossing; iron post stamped "Prim. Trav. Sta. No. 5, 315, 1912" ...	315.123
Roy, 1.3 miles south of, 40 feet west of track at private road crossing, in telegraph pole; copper nail marked "316.2"	316.58
Roy, 2.7 miles south of, 5 feet northeast of track, in top of concrete pier at north end of railroad bridge over Nisqually River; aluminum tablet stamped "288, 1912"	288.095
Roy, 3.7 miles south of, 36 feet southeast of track, in telegraph pole; copper nail marked "313.0"	312.83
Yelm, 0.6 mile north of, 34 feet northwest of track, in telegraph pole; copper nail marked "336.1"	336.00
Yelm, 276 feet north of station, 10 feet northwest of track at first road crossing north of station, 3 feet from railroad signpost; iron post stamped "Prim. Trav. Sta. No. 6, 350, 1912"	350.011
Yelm, 1 mile south of, 9 feet southeast of track, in 1-mile post; copper nail marked "366.4"	366.30
Yelm, 2.2 miles south of, 35 feet northwest of track, in telegraph pole; copper nail marked "383.7"	383.60
Yelm, 3.8 miles south of, 40 feet north of track, in telegraph pole; copper nail marked "428.0"	427.90
Rainier, 174 feet east of station, 10 feet north of track, at first road crossing east of station, near railroad signpost; iron post stamped "Prim. Trav. Sta. No. 7, 431, 1912"	429.727
Rainier, 0.6 mile southwest of station, 10 feet southeast of track, in railroad crossing signpost; copper nail marked "403.8"	403.71
Rainier, 1.4 miles south of, 40 feet north of track, in telegraph pole No. 17-19; copper nail marked "343.7"	343.60
McIntosh, 1 mile northeast of, 40 feet south of track, in telephone pole; copper nail marked "364.9"	364.68
McIntosh, 7 feet south of track, in post supporting railroad water tank; copper nail marked "344.0" (not found in 1914)	343.83
McIntosh, 0.7 mile south of, 3 feet north of track at crossroads, 6 feet south of electric bell; iron post stamped "Prim. Trav. Sta. No. 8, 352, 1912" ..	351.678
McIntosh, 1.6 miles south of, 8 feet south of track, in telegraph pole; copper nail marked "300.7"	300.57

Tenino, 1.9 miles north of, at road crossing 40 feet north of track, in telegraph pole; copper nail marked "296.8".....	Feet. 296.54
Tenino, 0.8 mile north of, 20 feet north of track, in telegraph pole; copper nail marked "290.0".....	289.87
Tenino, 42 feet in front of station; iron post stamped "Prim. Trav. Sta. No. 19, 280, 1912".....	279.532
Tenino, 1 mile north of, 8 feet south of track, in foundation of switchboard; copper nail marked "300.3" (not found in 1914).....	300.09
Tenino, 2.2 miles north of, 45 feet south of road crossing, 8 feet east of track, in telegraph pole; copper nail marked "292.6".....	292.46
Tenino, 2.9 miles north of, 5 feet northeast of track at road crossing, in post; copper nail marked "245.5".....	245.32
Tenino, 3.9 miles north of, 8 feet east of track, in telegraph pole; copper nail marked "252.4" (not found in 1914).....	252.18
Tenino, 5.4 miles north of, 30 feet northeast of track, in telegraph pole; copper nail marked "263.1" (not found in 1914).....	262.84
Tenino, 5.4 miles north of, in front of first house south of Plumb station, east of road at corner of garden fence, private road to house; iron post stamped "263 Wash 1912".....	262.581
Tenino, 6.8 miles northwest of, 3 feet west of track, in railroad switch; copper nail marked "241.3" (not found in 1914).....	241.05
Tenino, 7.6 miles northwest of, 15 feet northeast of track, in telegraph pole; copper nail marked "213.6" (not found in 1914).....	213.44
Tenino, 7.8 miles northwest of, 30 feet east of track, in telegraph pole; copper nail (not found in 1914).....	211.41
Tenino, 7.8 miles northwest of, at first road crossing north of Plumb, 40 feet east of track, near telegraph pole; iron post stamped "212 Wash 1912" (not found in 1914).....	211.807
Tenino, 9.1 miles northwest of, 30 feet southwest of track and road crossing, in telegraph pole; copper nail marked "186.0".....	185.91
Tenino, 10 miles northwest of, 30 feet southwest of track, in telegraph pole; copper nail marked "188.5" (not found in 1914).....	189.01
Tenino, 10.4 miles northwest of, 30 feet west of track at T road west, in telegraph pole; copper nail marked "191.2".....	191.03
Tenino, 10.9 miles northwest of, 5 feet east of track at road crossing; iron post stamped "Prim. Trav. Sta. No. 11, 184, 1912".....	183.820
Tenino, 11.6 miles northwest of, 60 feet west of track at T road, southwest corner of intersection, in telegraph pole; copper nail marked "174.5"....	174.24

From Tenino south along Northern Pacific Ry. to Winlock.

Tenino, 0.7 mile southwest of, in southwest corner fence post of Northern Pacific right of way, 30 feet northwest of track; copper nail marked "277.0" (not found in 1914).....	276.94
Tenino, 1.4 miles southwest of, 15 feet southwest of track at road crossing, in Northern Pacific crossing signpost; copper nail marked "270.3".....	270.29
Bucoda, 0.6 mile northeast of, 10 feet east of track; copper nail in post marked "252.7".....	252.68
Bucoda, 420 feet southwest of station, 30 feet west of track; iron post stamped "Prim. Trav. Sta. No. 20, 254".....	253.683
Bucoda, 0.5 mile southwest of, 15 feet northwest of track at road crossing, in telegraph pole; copper nail marked "250.6".....	250.56
Bucoda, 1.6 miles southwest of, 30 feet southwest of track, in telegraph pole; copper nail marked "241.1".....	241.04
Bucoda, 2.4 miles southwest of, 60 feet southwest of track, in tree stump; copper nail marked "223.5".....	223.46

Bucoda, 3.9 miles southwest of, 15 feet northeast of private road crossing, 25 feet northwest of track; iron post stamped "Prim. Trav. Sta. No. 21, 207, 1912"	Feet. 206.817
Bucoda, 4.5 miles south of, 20 feet west of track at road crossing, in telegraph pole; copper nail marked "207.4"	207.34
Centralia, 1 mile north of, 15 feet east of track, in telegraph pole; copper nail marked "194.4"	194.37
Centralia, 420 feet northwest of station, 8 feet west of track, 30 feet northwest of Maple Street; iron post stamped "Prim. Trav. Sta. No. 33, 184, 1912" (reported in 1914; removed)	184.380
Centralia, 0.6 mile south of, at Nut Street road crossing, 8 feet east of track; circle of paint on electric bell signal post (not found in 1914)	182.00
Chehalis, 0.5 mile north of station, 12 feet northeast of track at road crossing, in telegraph pole; copper nail marked "177.8" (not found in 1914)	177.70
Chehalis, 240 feet north of track, 30 feet north of West Street crossing, 9 feet north of signal tower; iron post stamped "188" (=Prim. Trav. Sta. No. 34)	187.696
Chehalis, 0.9 mile south of station, 6 feet west of track, in north end of trestle; copper nail marked "178.3"	178.19
Chehalis, 2.1 miles southeast of, in southwest end of bridge (No. 60) foundation; copper nail marked "196.3"	196.17
Chehalis, 2.7 miles southeast of, 6 feet northwest of track, 30 feet southeast of road crossing; iron post stamped "Prim. Trav. Sta. No. 35, 233, 1912" (reported in 1914; removed)	232.547
Chehalis, 4.1 miles southeast of, 10 feet east of track, on cement foundation of battery tank of Northern Pacific electric signal tower; circle of paint marked "314.3"	314.17
Chehalis, 5.5 miles southeast of, 5 feet southwest of track at road crossing; iron post stamped "Prim. Trav. Sta. No. 36, 392, 1912" (reported in 1914; covered up)	391.982
Napavine, at first road crossing north of station, 10 feet east of track, in telegraph pole; copper nail marked "440.7" (not found in 1914)	440.62
Napavine, 1 mile south of, 10 feet west of track, 15 feet south of road crossing; iron post stamped "Prim. Trav. Sta. No. 37, 442.6, 1912"	442.546
Napavine, 2.1 miles southwest of, 15 feet north of road crossing, 3 feet northwest of track, in southwest side of cattle guard; copper nail marked "441.4"	441.65
Napavine, 3 miles southwest of, near Evaline flag station, in northwest end of Northern Pacific bridge crossing over roadway, 8 feet west of track; copper nail marked "437.5"	437.45
Napavine, 4.3 miles southwest of, 40 feet west of track, in telephone pole; copper nail marked "383.2"	383.17
Winlock, 0.8 mile northeast of, 1 foot west of track, in northwest end of bridge over creek; copper nail marked "343.1"	343.03
From point 2 miles northeast of Cowlitz northeast to point near Clinebar.	
Cowlitz, 3.8 miles northeast of, 15 feet northwest of T road intersection, in telegraph pole; copper nail marked "374.4"	374.34
Cowlitz, 4.8 miles northeast of, 2 feet east of road, in telephone pole; copper nail marked "394.5" (not found in 1914)	394.50
Cowlitz, 5.8 miles northeast of, 8 feet east of road, in telephone pole; copper nail marked "423.2"	423.74
Cowlitz, 6.7 miles northeast of, 20 feet west of road, 112 feet south of walk leading to schoolhouse, in southeast corner of school yard; iron post stamped "Prim. Trav. Sta. No. 51, 451, 1912"	451.242

Cowlitz, 7.9 miles northeast of, 20 feet west of road at T road south, in tree stump; copper nail marked "471.7"	Feet. 471.65
Cowlitz, 8.9 miles northeast of, 1 mile east of Ethel, 7 feet north of northwest corner of school yard; iron post stamped "Prim. Trav. Sta. No. 50, 1912"	510.521
Cowlitz, 10 miles northeast of, north side of road, in tree stump; copper nail marked "546.5"	546.47
Cowlitz, 11.1 miles northeast of, north side of road, in tree; copper nail marked "591.8"	591.77
Cowlitz, 12 miles northeast of, 4 feet south of road, 20 feet southwest of crossroads; iron post stamped "Prim. Trav. Sta. No. 49, 622, 1912"	622.363
Cowlitz, 12.4 miles northeast of, north side of road, 38 feet from road intersection, in tree; copper nail marked "648.5" (not found in 1914)	648.44
Cowlitz, 13.3 miles northeast of, 20 feet north of road at T road south, in telephone pole; copper nail marked "551.0"	550.99
Cowlitz, 13.5 miles northeast of, 15 feet south of road at T road intersection, in telephone pole; copper nail marked "561.8"	561.74
Cowlitz, 14.8 miles northeast of, 10 feet south of road, in telephone pole; copper nail marked "668.9" (not found in 1914)	668.90
Silver Creek, 840 feet south of, 30 feet northwest of crossroads; iron post stamped "Prim. Trav. Sta. No. 48, 678, 1912"	678.415
Silver Creek, 1.2 miles northeast of, 10 feet west of road, in tree stump; copper nail marked "611.4"	611.40
Silver Creek, 1.9 miles northeast of, 165 feet north of crossroads, 8 feet east of road, in tree stump; copper nail marked "585.4"	585.45
Silver Creek, 3.7 miles northeast of, northeast side of road, in tree stump; copper nail marked "682.6"	682.57
Silver Creek, 4.5 miles northeast of, 10 feet north of road at Y road; iron post stamped "Prim. Trav. Sta. No. 47, 731, 1912"	730.853
Silver Creek, 5.7 miles northeast of, on east side of road, 30 feet from gate leading to house, in tree; copper nail marked "763.5" (not found in 1914)	763.51

From Cinebar west to Chehalls.

Cinebar, 1.8 miles southwest of, 3 feet north of road, in telegraph pole; copper nail marked "806.7" (not found in 1914)	806.70
Alpha, 3.6 miles east of, 9 feet east of gate to school yard, 45 feet north of road; iron post stamped "Prim. Trav. Sta. No. 45, 750, 1912"	749.902
Alpha, 2.5 miles east of, south side of road, in telephone pole; copper nail marked "704.7" (not found in 1914)	704.74
Alpha, 1.4 miles east of, opposite T road north, in telephone pole; copper nail marked "706.8"	706.80
Alpha, 0.3 mile west of, 30 feet south of road, in telephone pole; copper nail marked "821.8"	821.86
Alpha, 0.8 mile west of, 10 feet north of road, northwest corner of T road north; iron post stamped "Prim. Trav. Sta. No. 44, 785, 1912"	785.044
Alpha, 2.1 miles northwest of, west side of road, in tree stump; copper nail marked "877.2" (not found in 1914)	877.23
Alpha, 3 miles northwest of, northeast of road, in tree stump; copper nail marked "766.0" (not found in 1914)	766.01
Alpha, 3.6 miles northwest of, southwest side of road, in tree stump; copper nail marked "594.6" (not found in 1914)	594.67
Alpha, 4.4 miles northwest of, 12 feet west of road, opposite private gate to farmhouse; iron post stamped "Prim. Trav. Sta. No. 43, 607, 1912"	606.598

Alpha, 5.8 miles northwest of, 10 feet east of road, 234 feet northwest of private gate to house, in tree stump; copper nail marked "425.3" (not found in 1914).....	Feet. 425.32
Alpha, 6.9 miles northwest of, east side of road on edge, in tree stump; copper nail marked "388.8" (not found in 1914).....	388.88
Agate, 1 mile east of schoolhouse, 10 feet east of road, 75 feet southeast of T road intersection, in tree stump; copper nail marked "351.4".....	351.48
Agate School (district No. 205), 6 feet southwest of flagpole in school yard, 40 feet northwest of schoolhouse; iron post stamped "Prim. Trav. Sta. No. 42, 328, 1912".....	328.552
Agate, 1.2 miles west of, 6 feet south of road, 25 feet east of Shaver's gate, in tree stump; copper nail marked "312.0" (not found in 1914).....	312.07
Agate, 1.9 miles west of, 15 feet south of T road north, in root of tree; copper nail marked "300.5".....	300.61
Agate, 3.5 miles west of, in southeast corner of bridge near Forest; copper nail marked "274.6".....	274.69
Forest, opposite side of road from store and post office, 1 foot south of fence corner, 30 feet north of T road intersection; iron post stamped "Prim. Trav. Sta. No. 41, 299, 1912".....	298.801
Forest, 0.9 mile northwest of, 30 feet southwest of road, in front of Phillip's house near bridge over Newaukum River, in post; copper nail marked "261.4".....	261.46
Forest, 2 miles northwest of, 12 feet northeast of road intersection, in post; copper nail marked "289.8".....	289.89
Forest, 3.4 miles northwest of, 12 feet northeast of road, 15 feet northwest of bridge over creek, north of concrete road; iron post stamped "Prim. Trav. Sta. No. 40, 241, 1912".....	241.210
Forest, 4.6 miles northwest of, 15 feet southwest of road, in telephone pole; copper nail marked "231.5" (not found in 1914).....	231.56
Forest, 5.5 miles northwest of, 15 feet southeast of T road intersection, in pole; copper nail marked "224.8" (not found in 1914).....	224.84
Chehalis, 15 feet east of road, 54 feet northeast of intersection of Market and Sixth streets, in telephone pole; copper nail marked "216.4" (not found in 1914).....	216.49

From Centralia northwest 3 miles.

Centralia, 1.2 miles northwest of, 30 feet north of track, at road crossing, 50 feet northeast of railroad-crossing sign, in telegraph pole; copper nail marked "181.1" (not found in 1914).....	181.0
Centralia, 2 miles northwest of, 75 feet south of road, 50 feet west of track at road crossing, in telegraph pole; copper nail marked "181.6" (not found in 1914).....	181.55
Centralia, 3.1 miles northwest of, 30 feet east of track, in circle of paint on telegraph pole; nail marked "166.9" (not found in 1914).....	166.86

From Littlerock northeast along Northern Pacific Ry. to point 0.7 mile northeast of Belmore.

Littlerock, 2.3 miles north of, 10 feet east of track and 6 feet south of road, in crossing signpost; copper nail marked "156.5".....	156.35
Littlerock, 3.3 miles north of, at road crossing, 5 feet west of track, 6 feet south of road; iron post stamped "Prim. Trav. Sta. No. 28, 159, 1912".....	158.831
Littlerock, 4.3 miles north of, 30 feet west of track, on telegraph pole, in circle of paint; nail marked "166.6" (not found in 1914).....	166.45
Littlerock 4.9 miles north of, 5 feet south of road at road crossing, 8 feet east of track, in crossing signpost; copper nail marked "167.0".....	166.90

Littlerock, 5.9 miles north of, 30 feet west of track, on tree stump; nail in center of circle of paint, marked "162.6" (not found in 1914).....	Feet. 162.45
Belmore station, 9 feet west of track, south of station; iron post stamped "Prim. Trav. Sta. No. 29, 162, 1912".....	161.523
Belmore, 0.7 mile northeast of, 10 feet west of track at road crossing, on railroad-crossingsignpost; nail in circle of paint, marked "170.5" (Olympia quadrangle).....	170.33
From Silver Creek east along highway to point near Mossyrock (leveled twice).	
Silver Creek, 840 feet south of, 30 feet northwest of crossroads; iron post stamped "Prim. Trav. Sta. No. 48, 678, 1912".....	678.415
Silver Creek, 0.9 mile east of, 20 feet west of road, 100 yards southwest of house, in bottom of telephone pole; copper nail marked "558.6".....	557.49
Mayfield, 100 feet south of post office, at southwest corner of store, 40 feet southeast of road; iron post stamped "375".....	373.621
Mayfield, 1.4 miles east of, 20 feet west of road, 200 yards northwest of house, in bottom of telephone pole; copper nail marked "386.6".....	385.60
Mayfield, 2.2 miles east of, 10 feet southwest of road opposite clearing, in base of telephone pole; copper nail marked "522.3".....	521.26
Mossyrock, 2.8 miles west of, 20 feet south of road near G. E. Hendrick's mail box; iron post stamped "577".....	575.632
Mossyrock, 1.9 miles west of, 50 yards northeast of Klickitat School (district 206, ward 6), 20 feet north of road, in telephone pole; copper nail marked "592.6".....	591.67

CHELAN QUADRANGLE.

[Latitude 47° 30' 48"; longitude 120°-120° 30']

From point about 7 miles north of Wenatchee north along road up west side of Columbia River and up Knapp Coulee to Chelan.

Primary leveling in 1897 by P. F. Byrne, in 1898 by E. M. Fry, in 1903 by R. A. Farmer, and in 1912 by R. I. Thomas.

T. 24 N., R. 20 E., sec. 26, near mouth of Swakane Creek, 10 feet west of State road and 10 feet north of road up Swakane Valley; iron post stamped "696 T".....	696.474
O'Connor's ferry, 100 feet southwest of ferry derrick, on west side of road, top of granite boulder.....	706.2
T. 25 N., R. 21 E., north side of sec. 20, 250 feet northwest of Entiat River bridge, 150 feet northeast of store on north side of road; iron post stamped "696 T".....	696.707
T. 26 N., R. 21 E., south side of sec. 20, 200 feet northwest of J. T. Fisher house, 6.0 miles southwest of Knapp's ferry, near steam ferry landing; iron post stamped "705 T".....	705.392
Knapp's ferry, fractional sec. 12 T. 26 N., R. 21 E., opposite Troy, 35 feet south of warehouse, at south side of granite boulder; iron post stamped "709 T".....	709.286
Knapp Coulee, near northwest corner of cornfield, on top of large boulder (5 cubic yards), on stage road.....	1,209.13
Tps. 26 and 27 N., and Rs. 21 and 22 E., in Knapp Coulee, 710 feet west of corner; iron post stamped "1370".....	1,340.000
Navarre's east fence, about 400 feet east of and about 60 feet south of road, top of rock 6 feet high and 6 feet in diameter.....	1,145.76
Lakeside, about 100 feet from Lake Chelan, set inside of Capt. Johnson's fence; iron post stamped "1121".....	1,091.182
Lakeside, at wharf; water level 4 p. m. Aug. 13, 1897.....	1,078
Lake Chelan, near gate 100 feet from, in root of pine tree; wire nail.....	1,084.48

Chelan, 125 feet left of road opposite cut bank, Chelan River, on top of boulder.....	Feet. 1, 207. 96
Lake Chelan, water level on north side, 12.30 p. m., July 31, 1897.....	1, 079
Lakeside, at wharf in front of Lakeview Hotel; water level in Lake Chelan at 3 p. m., June 8, 1899.....	1, 080. 7
Chelan, 0.5 mile west of, 50 feet west of south end of bridge over Chelan River; top of boulder.....	1, 088. 93
From Columbia River along highway north up Navarre Coulees to summit of ridge (spur line; elevations unreliable).	
T. 27 N., R. 21 E., quarter corner secs. 16 and 21; top of corner stone.....	1, 465. 7
T. 27 N., R. 21 E., sec. 9, 300 yards southwest of log cabin, 40 feet east of road, on a knoll in clump of pine trees, at top of ascent on south side of ridge; iron post stamped "1664 T".....	1, 664. 130
From Columbia River northwest along highway up Entiat Valley (spur line; elevations unreliable).	
T. 26 N., R. 20 E., sec. 20, 200 feet north of Gray house, in northeast corner of fence 5 feet west of road, in granite boulder; aluminum bolt stamped "1316 T".....	1, 316. 618
T. 27 N., R. 19 E., sec. 2, 100 feet north of log house, 100 feet west of crib, east side of trail up Entiat River, in large granite boulder; aluminum bolt stamped "1680".....	1, 680. 824
From Columbia River west along highway and trail up Swakane Canyon and south down Nehocum Canyon to Mission.	
T. 24 N., R. 19 E., sec. 11, summit of divide between Swakane and Nehocum canyons, 10 feet west of trail, in granite boulder; aluminum bolt stamped "3255".....	3, 255. 847
Mission, in front of Great Northern Ry. station; top of rail.....	796. 1
Mission, 150 feet southwest of station, 100 feet south of railroad water tank, at corner in center of NW. $\frac{1}{4}$ sec. 4, T. 23 N., R. 19 E.; iron post stamped "797 T".....	797. 320
From O'Connor's ferry along highway east to Waterville, thence north to Knapp's ferry.	
O'Connor's ferry landing, 400 feet east of, 1.0 mile southwest of Orondo, on north side of road and east bank of Columbia River; iron post stamped "678 T".....	678. 864
T 25 N., R. 22 E., 42 feet northeast of corner of secs. 29, 30, 31, and 32; iron post stamped "2771".....	2, 771. 510
T. 25 N., R. 22 E., corner of secs. 19, 20, 29, and 30, top of stone set for corner.....	2, 799. 63
Waterville, Douglas County courthouse, in east wall of brick vault on south side of, 2 feet from ground and 2 feet from southeast corner of vault; aluminum tablet stamped "2617 T".....	2, 617. 361
Waterville, Douglas County Bank building, in front wall, 2 feet from sidewalk and 2 feet north of entrance door; aluminum tablet stamped "2624 T".....	2, 624. 087
T. 26 N., R. 22 E., southeast corner of sec. 28. on front or south side of foundation of schoolhouse, 1.5 feet from ground and 2 feet from southeast corner; aluminum tablet stamped "3004 T".....	3, 004. 853
T. 26 N., R. 22 E., sec. 29, at head of Bunn's Canyon, 250 feet northwest of small house, 10 feet from east side of road; iron post stamped "3055 T".....	3, 054. 933
Troy post office, 1,000 feet southwest of, just opposite warehouse at Knapp's ferry, on left bank of Columbia River; iron post stamped "725 T".....	725. 225

From Dobson ranch along highway by circuitous route to south via Badger Mountain to Waterville.

T. 24 N., R. 21 E., sec. 12, Badger Mountain, at junction of roads on summit; iron post stamped "4145".....	Feet. 4, 144. 954
T. 25 N., R. 22 E., southeast corner of sec. 33, 150 feet southeast of schoolhouse (district 3), on north side of road; iron post stamped "2736 T".....	2, 736. 151

From road summit on Badger Mountain south along highways to sec. 11, T. 23 N., R. 21 E. (checked spur line).

T. 24 N., R. 21 E., sec. 12, across first culvert south of summit, on west side of road, 0.4 mile south of summit; copper nail in small pine stump, painted "U. S. 4091".....	4, 091. 95
T. 24 N., R. 21 E., sec. 13, 1.5 miles north of old sawmill, 0.8 mile south of summit, 50 feet west of fence on west side of road; copper nail in stump, painted "4036".....	4, 035. 63
T. 24 N., R. 21 E., sec. 14, on west side of canyon, about 400 feet north of road; nail in top of stump.....	3, 940. 30
T. 24 N., R. 21 E., sec. 23, 0.2 mile south of Pine Grove schoolhouse, on west side of road, on top of first ridge south of schoolhouse; copper nail in stump, painted "U. S. 3691".....	3, 691. 24
Pine Grove schoolhouse, 1.2 miles south of, in center of sec. 26, T. 24 N., R. 21 E., 30 feet east of road; iron post stamped "3619".....	3, 618. 389
T. 24 N., R. 21 E., sec. 26, 400 feet south of above permanent bench mark; nail in telephone post, painted "3593".....	3, 592. 48
T. 24 N., R. 21 E., on north line of sec. 35, 0.9 mile north of road to west, west side of road; nail in telephone post, painted "U. S. 3421".....	3, 421. 33
T. 24 N., R. 21 E., south line of sec. 35, on first road to west, at foot of Badger Mountain, 300 feet from junction; nail in fence post, painted "U. S. 3258".....	3, 257. 76
T. 23 N., R. 21 E., sec. 2, 500 feet north of crossroads; nail with washer in fence post, painted "U. S. 3103".....	3, 103. 24

CHEWELAH QUADRANGLE.

[Latitude 48°-48° 30'; longitude 117° 30'-118°.]

From Clayton northwest along Spokane Falls & Northern (Great Northern) Ry. to Ardon spur. (Part of unadjusted line from Deer Park to Meyers Falls closing -3.89 feet.)

Primary leveling in 1901 by R. A. Farmer.

Loon Lake, 50 feet west of northwest corner of station; iron post stamped "2416 S".....	2, 414. 058
Springdale, at west end of station platform; iron post stamped "2086 S".....	2, 083. 344
Valley, 60 feet west of mail catch; iron post stamped "1670 S".....	1, 667. 175
Chewelah, 300 feet north of station, 150 feet south of milepost 65; iron post stamped "1668 S".....	1, 665. 600
Blue Creek, at northeast corner of post office; iron post stamped "1639 S".....	1, 633. 163
Addy, at road crossing, 150 feet south of milepost 74; iron post stamped "1635 S".....	1, 628. 995
Ardon Spur, north of Ayer's barn, 15 feet east of track; iron post stamped "1605 S".....	1, 598. 713

CHIWAUKUM QUADRANGLE.

[Latitude 47° 30'-48°; longitude 120° 30'-121°.]

From Camas Creek north to Peshastin.

Primary leveling in 1898 by R. A. Farmer and H. K. Kallock, in 1900 by E. M. Fry, and in 1901 by C. E. Hill.

County road south side of Wenatchee River, at junction of Peshastin road, 5 feet north of road forks, 12 feet west of fence corner, 2 feet south of wire fence, 85 feet south of 14 by 20 foot log cabin; iron post stamped "1103 T".....	1, 103. 771
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From Wenatchee northwest along Great Northern Ry. to Index (spur line; elevations unreliable).

Peshastin station, 65 feet southeast of wagon road, 75 feet southwest of track at road crossing and mail catch, 20 feet southeast of small board shack; iron post stamped "1045 T".....	Feet. 1,046.012
Peshastin, 2.3 miles west of, 6 feet north of track, 12 feet southwest of point of bluff at west end of sand-rock grading along Wenatchee road, 20 feet east of small ravine and filling; iron post stamped "1095 T".....	1,096.028
Leavenworth, 120 feet southwest of station office, 5 feet southeast of platform, 3.5 feet southwest of low building; iron post stamped "1165 T".....	1,165.593
Leavenworth, 2.6 miles from, 3,810 feet north of milepost 1676, 6 feet east of track, under low bank, 20 feet east of large boulder; iron post stamped "1309 T".....	1,310.003
"Big eddy" of Wenatchee River, east of, 4.5 feet west of track, 150 feet north of milepost 1679, at south end of cut around high rock point; iron post stamped "1556 T".....	1,556.309
Leavenworth, 8.2 miles northwest of, 13.5 feet east of track, directly east of small island in Wenatchee River, 360 feet southeast of rocky point at track curve, 1,950 feet south of milepost 1682; iron post stamped "1647 T".....	1,647.468
Chiwaukum, 40 feet south of corner of section house, 60 feet southeast of mail catch and switch, 40 feet northeast of track, 4 feet north of telegraph pole; iron post stamped "1814 T".....	1,815.054
Chiwaukum divide (Little Summit), about 750 feet south of top of; top of east rail at road crossing and track sign.....	2,084.5
Chiwaukum Summit, at north end of dirt cut at, 3.4 miles north of Chiwaukum, 19 feet east of track, 455 feet north of milepost 1687; iron post stamped "2083 T".....	2,083.288
Nason Creek, 19 feet south of signpost, 975 feet east of switch at west end of sidetrack at, 13 feet north of track; iron post stamped "2162 T".....	2,162.243
Merritt, 133 feet northwest of water tank, 15 feet southeast of 2.5-foot stump 6 feet from track, 11 feet southwest of main track; iron post stamped "2186 T".....	2,186.306
Merritt, 3 miles west of, 11 feet southwest of track at cut around rock point, 1,530 feet west of trestle 384, 930 feet east of bridge 385; iron post stamped "2485 T".....	2,485.840
Berne, 180 feet east of switch to spur, 7.5 feet south of main track, 225 feet west of water tank; iron post stamped "2918 T." (This bench mark was lowered 0.5 foot Dec. 13, 1904, by order of superintendent of railroad, as it interfered with and endangered lives of trainmen, and the elevation was corrected).....	2,918.170

From mouth of Eagle Creek along highway and trail to summit of divide, thence west down Chumstick Canyon to Northup ranch.

Bellvue ranch, 10 feet south of large gate at west entrance, 2 feet from fence, 10 feet south of road; iron post stamped "1330 T".....	1,330.374
Smith ranch, 1,000 feet west of house, 50 feet west of large entrance gate, 200 feet southwest of barn; iron post stamped "1984 T".....	1,984.591
Chumstick Canyon, on summit of divide between Eagle and Chumstick creeks, at root of pine tree; aluminum tablet stamped "3270 T".....	3,270.904

Northwest up Strombergs Canyon to divide between Strawberry Creek and Wenatchee River (spur line; elevation unreliable).

Strombergs Canyon, 0.1 mile east of, on north side and 150 feet west from mouth of summit, in large boulder; aluminum tablet stamped "1767 T".	1,768.133
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From Chumstick schoolhouse, at mouth of Schoolhouse Canyon, west along old road to Chiwaukum.

Chumstick schoolhouse, 800 feet east of, at forks of road; iron post stamped "1631 T".....	Feet. 1, 631. 897
Chumstick schoolhouse, 2 miles west of, at summit between Schoolhouse Canyon and Wenatchee River, at north side of road, in root of pine tree; nail.....	2, 116. 21

From Chiwaukum west up Chiwaukum Creek to Brown Bear mining camp (spur line; elevation unreliable).

Brown Bear mine, 250 feet north of, 300 feet northwest of falls of Chiwaukum Creek, 10 feet north of trail, 100 feet north of creek; iron post stamped "2374T".....	2, 374. 846
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Up Chumstick, Little Chumstick, and Wenatchee rivers to Wenatchee Lake, thence south to Chiwaukum Summit.

Chumstick Canyon, mouth of, 5 feet east of trail, 500 feet southeast of road, in top of stump; nail.....	1, 734. 52
Burgess ranch, 300 feet southwest of house at gate, 5 feet west of fence, 150 feet south of Beaver Creek bridge; iron post stamped "1882 T".....	1, 882. 20
Coal mines, 500 feet north of shaft house, 10 feet south of road, in root of pine tree; nail.....	2, 008. 99
Wenatchee Lake, 500 feet southeast of bank at foot of, at old steamer landing, 150 feet east of Wenatchee River, 150 feet north of old log shack; iron post stamped "1880 T".....	1, 880. 368
Wenatchee Lake, foot of, water level 8.30 a. m., Aug. 20, 1900.....	1, 870

From Martin north along highway to Snoqualmie Pass (spur line; elevations unreliable).

Wenatchee Lake, 150 feet southwest of house on Bates ranch, 5 feet inside of fence, 50 feet from bank at head of lake; iron post stamped "1873 T".....	1, 874. 052
Bates ranch, 4.0 miles north of, 5 feet east of trail up White River, 300 feet north of third bend in river; iron post stamped "1905 T".....	1, 905. 923

From Leavenworth (Shugart ranch) north along highway and Chiwawa Creek trail to Buck Creek Pass (part of single spur line; elevations unreliable).

Foster ranch, 300 feet northwest of house, 10 feet west of road to Lakeview mine, in root of pine tree; nail marked "2027".....	2, 027. 48
Deep Creek, 100 feet south of, in forks of Chiwawa Creek trail and road to Lakeview mine, in root of fir tree 1 foot east of trail; nail.....	2, 238. 88
Cross Creek, 0.5 mile northwest of, 4 feet northeast of trail, in root of big fir tree; nail marked "2174".....	2, 175. 59
Alder Creek, 28 feet south of bridge over, 10 feet east of trail; iron post stamped "2137 T".....	2, 138. 777
Alder Creek, 2.0 miles northwest of, 1 foot south of trail, top of pointed rock about 2 feet high at summit of hill.....	2, 558. 60
Twin Creek, 8 feet north of, 2 feet west of trail, in root of black pine tree; nail marked "2348".....	2, 339. 12
Grouse Creek, 500 feet south of, 6 feet east of trail, in root of black pine tree; nail marked "2501".....	2, 492. 36
Chickman Creek, 70 feet southeast of trail crossing (ford), in base of large pine tree; nail.....	2, 429. 97
Chickman Creek, 60 feet southeast of trail crossing (ford), 12 feet northwest of large pine tree; iron post stamped "2438 T".....	2, 429. 588
Chickman Creek, at trail crossing; surface of water Aug. 17, 1901.....	2, 422. 9

Chickman Creek, 2.7 miles northwest of, 3 feet east of trail, 780 feet north- west of small stream, in root of tall pine tree; nail marked "2489".....	Feet. 2, 480. 81
Rock Creek, 1.0 mile southeast of, 3 feet west of trail, on rock 9 feet square and 6 feet high, in south face; bronze tablet stamped "2512 T".....	2, 503. 652
Rock Creek, at trail crossing; surface of water Aug. 23, 1901.....	2, 490. 1
Rock Creek, 1.3 miles northwest of, 8 feet west of trail, in root of big fir tree; nail marked "2502".....	2, 493. 20
Rock Creek, 3.4 miles northwest of, 7 feet west of trail, 100 feet north of dry rocky creek bed, in root of spruce tree; nail marked "2578".....	2, 539. 46

CHOPAKA QUADRANGLE.

[Latitude 48° 30'-49°; longitude 119° 30'-120°.]

From Snolden ranch along highway northeast to Boone ranch, thence northwest to
Conconully, thence southwest to Snolden ranch.

Primary leveling in 1902 by E. M. Fry and in 1903 by F. E. Fellows.

Ruby City schoolhouse, 1,000 feet northeast of, 500 feet east of bridge over creek, 10 feet west of road, in root of pine tree; nail marked "1880".....	1, 876. 831
Conconully, 3 miles southeast of, at northeast corner of Boone ranch, 25 feet west of road forks at Conconully-Riverside and Conconully-Brewster stage roads, in corner of fence; iron post stamped "2036".....	2, 033. 32
Conconully, 0.8 mile east of, top of steep grade on Brewster road, north side of road, in root of fir tree; nail marked "2382".....	2, 379. 28
Conconully, 600 feet north of schoolhouse at forks of Brewster stage road and Loop Loop road, in cottonwood tree; nail marked "2294".....	2, 291. 26
Conconully, 2 miles south of, 50 feet west of West Fork of Salmon Creek, 4 feet south of road; top of boulder marked "2348".....	2, 345. 36
Milepost 3, 25 feet east of, 3 feet south of road, in root of fir tree; nail marked "2728".....	2, 724. 94
Old log cabin, 100 feet south of, 50 feet east of road, in root of fir tree; nail marked "3103".....	3, 100. 654
Milepost 6, 200 feet east of; top of boulder in road, marked "3236".....	3, 233. 44

From Conconully along highway north to Fish Lake, thence east to Wagonroad
Coulee, thence south to Riverside.

Conconully, Okanogan County courthouse, 10 feet north of front gallery, 6 feet west of steps; iron post stamped "2361".....	2, 358. 343
Conconully, 1.5 miles east of, 500 feet north of lake, 20 feet north of road, in root of pine tree; nail marked "2329".....	2, 325. 79
Summit, 0.25 mile south of, east side of road, in tree; nail marked "2340".....	2, 337. 51
Old sawmill site, 0.25 mile south of, 25 feet west of road, in root of fir tree; nail marked "2232".....	2, 229. 40
Speckman ranch, 50 feet south of house, 50 feet north of barn, east side of road, in root of tamarack tree; nail marked "1827".....	1, 824. 26
Speckman ranch, 400 feet north of house, at junction of road up Fish Lake and Loomis-Conconully stage road, 0.5 mile north of Fish Lake, east side of road; iron post stamped "1822".....	1, 819. 417
Sehalon ranch, 400 feet north of house, 0.25 mile east of Fish Lake, 50 feet south of road, in root of pine tree; nail marked "1811".....	1, 808. 37
Noyes ranch, 400 feet north of house, 20 feet north of road, at summit of divide at head of Pine Creek, in root of cottonwood tree; nail marked "2182".....	2, 179. 86
Mud Lake; surface of water No. 20, 1902.....	2, 116. 5

Reed's store, 50 feet south of, 125 feet north of road, 0.25 mile east of junction of roads up north fork and south or main fork of Pine Creek; iron post stamped "2119".....	Feet. 2, 116.395
Fate ranch, 150 feet south of east gate to, at northwest corner of log school-house; top of corner stone marked "2024".....	2, 021.85
Wagonroad Coulee, 4 miles north of Riverside, Wash., 75 feet east of road, 0.5 mile east of small lake; iron post stamped "1230".....	1, 222.008
Riverside, on west bank of Okanogan River, 5 feet north of road to ferry; iron post stamped "865".....	857.257

From Fish Lake along highway north to Loomis, thence east to Oroville.

Cockron ranch, 30 feet west of barn, 300 feet east of house, 60 feet east of gate, 700 feet north of north end of Blue Lake, east side of road; iron post stamped "1683".....	1, 680.538
Hall ranch, 600 feet south of house, 50 feet east of road, in root of pine tree; nail marked "1500".....	1, 497.33
Chilson ranch, 1 mile south of, 10 feet east of road, 200 feet east of creek, on large boulder; chisel mark marked "1411".....	1, 407.58
Hall ranch, 600 feet south of house, 50 feet east of road, 10 feet south of bearing tree to sec. 26, T. 38, N., R. 25 E.; iron post stamped "1501".....	1, 498.474
Chilson ranch, 300 feet south of gate, east side of road; top of stone marked "1332".....	1, 328.39
Loomis, northeast corner of post office, on south side of main street, 15 feet west of front door of Loomiston Trading Co.'s store, at edge of sidewalk; iron post stamped "1310".....	1, 306.478
Riley ranch, at northeast corner of, 20 feet south of Oroville road, 10 feet west of sheep chute road, in post; nail marked "1419".....	1, 415.83
Spectacle Lake, at west end of; surface of water, Oct. 27, 1902.....	1, 347.8
Bright Spot mining camp, 1,000 feet south of bunk house and tunnel, 50 feet southeast of road, at top of steep grade; iron post stamped "1916 T".....	1, 909.470
Golden, 2 miles south of, 0.25 mile west of lake, 10 feet west of road; top of stone.....	1, 931.96
Wannacut Lake; surface of water Nov. 14, 1901.....	1, 845.5
Golden, 10 feet south of porch to old store, 300 feet north of Spokane mill, 10 feet north of road; iron post stamped "1891 T".....	1, 884.310

From Riley ranch (east of Loomis) along highway southeast to point near Tonasket.

Barberry ranch, 1 mile south of, 50 feet east of road; on top of large boulder.....	1, 685.75
King ranch, 0.5 mile of, 150 feet east of road; top of large boulder.....	1, 603.13
Lloyd Beal ranch, 300 feet north of house, 25 feet northeast of corral, 15 feet east of road; iron post stamped "1459".....	1, 455.565

From Lloyd Beal ranch southwest to Aeneas Creek and Lake (single-spur line elevations unreliable).

Aeneas Creek, crossing of county road (Tonaskett-Conconully road), 100 feet south of creek ford, 50 feet southeast of road, on side of hill; top of boulder marked "1389".....	1, 385.71
Aeneas Lake; surface of water Dec. 2, 1902.....	1, 358.0

From Loomis along highway northwest up Similkameen River to Canadian boundary (spur line, elevations unreliable).

Loomis, 2 miles north of, 50 feet east of road, on high point, in root of lone pine tree; nailed marked "1277".....	1, 274.381
Alderman ranch, 1,000 feet north of house, 10 feet east of road; top of large boulder marked "1192".....	1, 188.87

	Feet.
Palmer Lake; surface of water at south end Oct. 30, 1902.....	1, 147
Pitman ranch, 1,000 feet west of house, 12 feet north of gate, 300 feet east of Palmer Lake, on east side of road; iron post stamped "1177".....	1, 173. 673
Pershall ranch, 500 feet west of house, 100 feet west of road, 150 feet east of Palmer Lake, in root of pine tree; nail marked "1162".....	1, 159. 43
Thein ranch, 150 feet north of house, 5 feet north of road, 100 feet from lake; top of boulder in place marked "1190".....	1, 186. 617
Edwards ranch, 0.25 mile south of house, at junction of road up Similkameen River and road down river to Nighthawk post office; iron post stamped "1166 T".....	1, 163. 121
Golden Zone stamp mill, 800 feet southeast of, 200 feet west of road; point on large boulder marked "1200".....	1, 196. 65
International boundary line, 0.25 mile south of, 300 feet northeast of Indian cabin, 3 feet east of road, 0.25 mile west of Similkameen River: iron post stamped "1197".....	1, 194. 316
From Palmer Lake north along highway down Similkameen River to Canadian boundary.	
Clark ranch, 0.25 mile west of, 3 feet south of road, 10 feet east of telephone pole; top of boulder.....	1, 412. 19
Blue Lake, 150 feet south of, 10 feet north of road; top of stone.....	1, 794. 85
Blue Lake, surface of water Nov. 13, 1901.....	1, 764. 7
Blue Lake, 0.25 mile south of, 4 feet east of road; top of boulder.....	1, 852. 47

CLALLAM QUADRANGLE.

[Latitude 48° 15'-48° 30'; longitude 124° 15'-124° 30'.]

Near East Clallam. Leveled twice (preliminary).

Primary leveling by R. C. Seitz in 1917.

East Clallam, 1.51 miles south of, at lane west to barn, in base of telephone pole; spike, painted "U. S. 38 B. M.".....	38. 678
East Clallam, in front of hotel, at southeast corner of approach to wharf; iron post stamped "Prim. Trav. Sta. No. 31 15 1917".....	15. 201
NOTE.—U. S. C. & G. S. b. m. at West Clallam was destroyed by railroad construction.	
East Clallam, 1 mile west of, in base of telegraph pole; spike, painted "U. S. 14 B. M.".....	14. 859

COLVILLE QUADRANGLE.

[Latitude 48° 30'-49°; longitude 117° 30'-118°.]

From Ardon spur northwest along Spokane Falls & Northern (Great Northern) Ry. to Meyers Falls. (Part of line from Deer Park to Meyers Falls, unadjusted, closing -3.89 feet.)

Primary leveling in 1901 by R. A. Farmer and in 1905 by J. G. Hefty.

Colville, 120 feet west of station; iron post stamped "1582 ".....	1, 575. 543
From Ryan northeast along Spokane Falls & Northern (Great Northern) Ry. to Boundary (double line).	
Ryan post office and store, in front of, at road crossing; top of rail.....	1, 360. 2
Milepost 117, 0.3 mile south of, 150 feet south of square water tank; top of rail.....	1, 349

Milepost 119, 17 feet north of, 22 feet west of center of track; iron post stamped "1427 T".....	Feet. 1,425.132
Marble post office, in front of, at road crossing; top of rail.....	1,463.7
Milepost 122, 6 feet north of second telegraph pole north of, 27 feet west of track, at section line between secs. 16 and 17, wagon road on top of bluff 200 feet higher; iron post stamped "1442 T".....	1,439.466
Milepost 124, across track from, about 20 feet south of, in rock cut in limestone at south end of cut above Little Dalles; aluminum tablet stamped "1356 T".....	1,354.229
Milepost 127, 20 feet northwest of, 10 feet from track; point of granite boulder.....	1,323.04
Milepost 127, 20 feet north of, 10 feet northwest of track, in granite boulder; aluminum tablet stamped "1325 T".....	1,323.012
Red Mountain Junction, at north switch; top of rail.....	1,320.6
Northport, in south end of, in southwest corner of block 7, on street next to railroad; iron post stamped "1335 T".....	1,332.945
Milepost 130, 10 feet west of track, at beginning of rock cut just north of smelter; point on rock.....	1,351.12
Trestle 78, center of, across large creek; top of rail.....	1,337.5
Milepost 132, 0.25 mile south of, 30 feet west of track, 6 feet from telegraph pole, near river bank, north end of tangent on Sand Flat; iron post stamped "1329 T".....	1,326.819
Milepost 136, 6 feet from; iron post stamped "1338 T".....	1,336.632
Boundary, Wash., on international boundary line, on gravel flat, near azimuth mark; iron post stamped "1356".....	1,354.138
Boundary; top of azimuth post.....	1,356.168
Boundary, at boundary line crossing; top of rail.....	1,352.6

CONNELL QUADRANGLE.

[Latitude 46° 30'–47°; longitude 118° 30'–119°.]

Along Northern Pacific Ry.

Precise leveling by the U. S. Coast and Geodetic Survey.

Lind, 3 miles east of station, 35 meters north of highway crossing, 20 meters west of track, 2 meters from telegraph pole; iron post (U. S. C. & G. S. b. m. J ₅).....	1,418.081
Lind, under water tank of Northern Pacific Ry., 75 meters southeast of station; U. S. G. S. iron post stamped "1,362" (U. S. C. & G. S. b. m. K ₅).....	1,361.014
Lind, 1.25 miles west of station, in concrete pillar to Chicago, Milwaukee & St. Paul Ry. crossover; disk (U. S. C. & G. S. b. m. L ₅).....	1,337.504
Akron, at east end of siding, 10 meters north of track; iron post (U. S. C. & G. S. b. m. M ₅).....	1,402.195
Providence, 0.25 mile east of milepost 173, 25 meters south of track; U. S. G. S. iron post stamped "1,476" (U. S. C. & G. S. b. m. N ₅).....	1,476.014
Providence, 300 meters west of milepost 175, 75 meters east of track; iron post (U. S. C. & G. S. b. m. O ₅).....	1,534.990
Beatrice, 40 meters south of station, 10 meters east of track at mile 178; U. S. G. S. iron post stamped "1,394" (U. S. C. & G. S. b. m. P ₅).....	1,393.501
Cunningham, 3 miles east of station, 75 meters east of milepost 180, 15 meters south of track; iron post (U. S. C. & G. S. b. m. Q ₅).....	1,293.948
Cunningham, 50 meters north of station, 25 meters east of track; U. S. G. S. iron post (U. S. C. & G. S. b. m. R ₅).....	1,165.913
Hatton, 100 meters northeast of station 75 meters north of track, at edge of highway to rear of lumber sheds; U. S. G. S. iron post stamped "1,077" (U. S. C. & G. S. b. m. S ₅).....	1,076.940

Emery, 2 miles east of station in concrete abutment of bridge 185; disk (U. S. C. & G. S. b. m. T ₅).....	Feet. 986.081
Emery, 25 meters south of Bridge 194, 10 meters east of track; U. S. G. S. iron post stamped "924" (U. S. C. & G. S. b. m. U ₆).....	923.889
Cactus, 300 meters east of east end siding, 50 meters east of milepost 200, 15 meters south of track; U. S. G. S. iron post stamped "715" (U. S. C. & G. S. b. m. V ₅).....	714.887

From Mesa northeast along Northern Pacific Ry. to Lind (double line).

Double line by H. G. Crowe, in 1898, redetermined by U. S. Coast and Geodetic Survey.
Primary leveling in 1903 by R. B. Shaw.

Connell station, 0.33 mile southwest of new Northern Pacific Ry. station at former station site, 16 feet southeast of center of track; iron post stamped "838 T".....	837.806
Hatton, in front of telegraph office; top of rail.....	1,063.6
Scott, in front of telegraph office; top of south rail.....	1,165.9
Providence, in front of section house; top of rail.....	1,537.4

From Lind west along highway to Adams-Grant county line. (Readjusted.)

Lind, 3.1 miles west of, 15 feet southeast of Lind Coulee road, 120 feet southwest of bridge over Dry Creek; iron post stamped "1316 T".....	1,315.681
Lind, 5.6 miles west of, 15 feet southeast of Lind Coulee road, 20 feet northwest of perpendicular bluff 25 feet high, in top of large boulder; tablet stamped "1297 T".....	1,296.624
Lind, 9 miles west of, 20 feet northeast of Lind Coulee road, on top of hill just above schoolhouse, in rock 3 feet 6 inches long and 6 inches above ground; tablet stamped "1325 T".....	1,324.082
Lind, 11.5 miles west of, 10 feet northeast of Lind Coulee road, 100 feet southwest of gap in fence, in rock among a number of loose boulders; tablet stamped "1247 T".....	1,246.932
T. 17 N. R. 31 E., center of east of sec. 14, 10 feet west of Lind Coulee road, 1 foot east of Knottingham's east fence, in rock 3 feet long set 25 feet in ground; tablet stamped "1202 T".....	1,201.428
Lind, 18.1 miles west of, 50 feet west of junction in forks of old Crab Creek or McManoman trails or roads; iron post stamped "1198 T".....	1,197.486
T. 17 N., R. 31 E., 350 feet west of center line in SW. $\frac{1}{4}$ sec. 6, 0.25 mile north of county road, 900 feet north of windmill; iron post stamped "1204 T" (recovered in 1916 by D. S. Birkett).....	1,203.467

From south border of quadrangle northeast along Spokane, Portland & Seattle Ry. to Kahlotus, thence west along Oregon-Washington R. R. & Navigation Co. tracks to Connell.

Leveling in 1916 by D. S. Birkett.

Burr Canyon, southwest end of Southern Pacific & Seattle steel bridge No. 265-8, east side of track, in concrete abutment; aluminum tablet stamped "675 Wash. 1916".....	674.671
Tunnel 15, at road crossing 1,050 feet northeast of; top of rail.....	693.7
Farrington, 1.23 miles southwest of, south end of steel bridge No. 267-6, east side track, top of concrete abutment; chiseled square, marked "U. S. B. M. 713".....	712.43
Farrington, top of nearest rail opposite signboard.....	739.1
Farrington, 0.28 mile northeast of signboard, south end of steel bridge No. 269-1, east side track, concrete abutment; aluminum tablet stamped "Wash. 1916 744".....	743.181

Farrington; 1.17 miles northeast of, southwest end steel bridge No. 270-0, east side track, concrete abutment: chiseled "U. S. B. M. 761".....	Feet. 760.56
Milepost 271; top of nearest rail opposite.....	784.5
Farrington; 2.62 miles northeast of, 0.2 mile southwest of south portal of tunnel 16, east side track, emergency rail stand; copper nail marked "U. S. 793 B. M.".....	792.36
Milepost 272, top nearest rail opposite.....	805.0
Kahlotus, 3.58 miles south of, 1 mile north of tunnel 16, 110 feet south of milepost 273, east side track, on large basalt boulder; aluminum tablet stamped "818 Wash. 1916" (face of boulder chiseled "B. M.").....	818.12
Monument siding, 120 feet south of signboard, east side of track, top emergency rail stand; copper nail, marked "U. S. 840 B. M.".....	839.69
Monument siding, top of nearest rail opposite signboard.....	840.3
Kahlotus, 1.8 miles south of, 10 feet north of milepost 275, east side of track, top of emergency rail stand; copper nail marked "U. S. 858 B. M.".....	857.58
Kahlotus, 0.9 mile south of, 900 feet south of south portal tunnel 17, west side of track, top of emergency rail stand; copper nail, marked "U. S. 877 B. M.".....	876.18
Kahlotus, 0.8 mile southeast of, south portal of tunnel 17, west side of, top of concrete floor; chiseled square, marked "U. S. 877 B. M.".....	877.00
Kahlotus, 0.4 mile southeast of, north portal tunnel 17, west side of, top of concrete floor; aluminum tablet stamped "884 Wash. 1916".....	883.621
Kahlotus, Oregon-Washington R. R. & Navigation Co. passenger depot, on section line, 13.5 feet due west of the northwest corner of depot, in angle of platform, 9.5 feet south of the nearest main line rail, 50 feet east of center of road, 1 foot below surface of ground; iron post stamped "1901" (U. S. Reclamation b. m., established about 1904).....	900.712
Kahlotus, 0.66 mile west of, 50 feet south of Oregon-Washington R. R. & Navigation Co. track, milepost 38, in base of telegraph pole; railroad spike marked "U. S. 901 B. M.".....	900.78
Kahlotus, 1.57 miles west of, 50 feet south of Oregon-Washington R. R. & Navigation Co. track, 50 feet east of private road crossing; iron post stamped "870 Wash 1916".....	869.989
Kahlotus, 2.66 miles west of, 50 feet south of Oregon-Washington R. R. & Navigation Co. track, milepost 40, in base of telegraph pole; railroad spike marked "U. S. 856 B. M.".....	855.92
Estes siding, 1.3 miles east of, 175 feet east of road crossing, milepost 41, in base of telegraph pole; railroad spike marked "U. S. 846 B. M.".....	845.48
Estes siding, 0.25 mile east of, 30 feet west of road crossing, 70 feet south of track, south side of road; iron post stamped "841 Wash 1916".....	840.393
Estes siding, top of nearest rail opposite signboard.....	834.9
Estes siding, 0.7 mile west of, 50 feet north of track, milepost 43, in base of telegraph pole; railroad spike marked "U. S. 787 B. M.".....	787.12
Estes siding, 1.72 miles west of, 50 feet north of track, milepost 44, in base of telegraph pole; railroad spike, marked "U. S. 760 B. M.".....	759.27
Sulphur Lake, 0.15 mile east of, 35 feet east of milepost 45, 30 feet south of track, on basalt rock; aluminum tablet stamped "741 Wash 1916".....	740.177
Sulphur, 40 feet east of signboard, 40 feet north of track, milepost 46; in base of telegraph pole; railroad spike, marked "U. S. 762 B. M.".....	761.97
Sulphur, top of nearest rail opposite signboard.....	763.5
Sulphur, 1 mile west of, 70 feet east of milepost 47, 20 feet north of track, top of emergency rail stand; copper nail, marked "U. S. 769 B. M.".....	768.65
Sulphur, 2 miles west of, 50 feet north of track, milepost 48, in base of telegraph pole; railroad spike, marked "U. S. 776 B. M.".....	775.15

Sulphur, 3 miles west of, 50 feet south of track, 70 feet south of milepost 49, in line with fence; iron post stamped "785 Wash 1916".....	Feet. 784.395
Curry, 1 mile east of, 50 feet north of track, milepost 50, in base of telegraph pole; railroad spike, marked "U. S. 795 B. M.".....	794.30
Curry, 130 feet east of signboard, 10 feet north of track, top of emergency rail stand; copper nail marked "U. S. 820 B. M.".....	819.49
Curry, top of nearest rail, opposite signboard.....	818.1
Curry, 1 mile west of, 140 feet east of milepost 52, 6 feet north of track, in circle of paint; point on basalt rock, painted "U. S. 855 B. M.".....	855.12
Connell, Oregon-Washington R. R. & Navigation Co. depot, top of nearest rail opposite operator's window.....	840.3
Connell station, 0.33 mile southwest of the new Northern Pacific Ry. depot, at former depot site, 16 feet southeast of center of track; iron post stamped "838 T" (B. 557 p. 28).....	837.806

From Connell north along Northern Pacific Ry. to Emery.

Connell, Northern Pacific Ry. depot, top of nearest rail opposite operator's window.....	840.4
Connell, 1.37 miles north of, 70 feet south of milepost 109, 6 feet east of Northern Pacific Ry. track, north end of trestle 209; copper nail, painted "U. S. 852 B. M.".....	851.56
Connell, 2.48 miles north of, 470 feet north of milepost 108, 5 feet east of Northern Pacific track, south end of trestle 205; copper nail, painted "U. S. 863 B. M.".....	863.35
Milepost 107, 0.2 mile south of, 330 feet south of whistle post, center of track; copper nail in tie.....	876.16
Emery, 0.59 mile south of, north end of concrete bridge 197, west side of track, top of concrete abutment; chiseled square painted "U. S. 904 B. M.".....	904.48
Emery, trestle 194, 100 feet south of west end of, 12 feet north of telegraph pole, 400 feet northeast of milepost "Wallula 55, Hope 191," 50 feet south of center of track; iron post stamped "924 T".....	923.889

From point 1.4 miles south of Emery northwest along Northern Pacific Ry. to west border of quadrangle near Shano Spur.

Connell, 3 miles northwest of, 180 feet southeast of milepost 3, east of Connell northern track, top of emergency rail stand; copper nail, painted "U. S. 972 B. M.".....	972.47
Connell, 4 miles northwest of, 60 feet east of milepost 4, north of track, top of emergency rail stand; copper nail painted "U. S. 1020 B. M.".....	1,019.94
Connell, 5 miles northwest of, 0.1 mile east of east end of switch, west end of trestle No. 8, north side of track; copper nail in top of abutment painted "U. S. 1070 B. M.".....	1,069.85
Frischneckt Spur, 300 feet south of signboard, 50 feet west of railroad track, south side of road; iron post stamped "1109 Wash 1916".....	1,108.577
Frischneckt Spur, 0.8 mile northwest of, 400 feet northwest of milepost 7, east side of track, top of emergency rail stand; copper nail painted "U. S. 1103 B. M.".....	1,103.10
Frischneckt Spur, 1.73 miles northwest of, 70 feet east of milepost 8, east side of track, top of emergency rail stand; copper nail, painted "U. S. 1113 B. M.".....	1,112.90
Franklin-Adams county line, top of nearest rail, opposite signpost.....	1,137.3
Frischneckt Spur, 2.58 miles northwest of, 0.2 mile southeast of milepost 9, east side of track, top of emergency rail stand; copper nail painted "U. S. 1151 B. M.".....	1,151.32

Shano Spur, 0.7 mile southeast of, 200 feet southeast of milepost 10, west side of track, top of emergency rail stand; copper nail, painted "U. S. 1211 B. M."	Feet. 1,211.02
Shano Spur, top of nearest rail opposite signboard.....	1,227.1
Shano Spur, 0.34 mile northwest of, 200 feet southeast of milepost 11, east side of track, north side of road; iron post stamped "1226 Wash 1916" ..	1,225.708

COULEE CITY QUADRANGLE.

[Latitude 47° 30'–48°; longitude 119°–119° 30'.

From Sprague water tank north along Northern Pacific Ry. to Coulee City, thence west along highway to point near Baird.

Primary leveling in 1903 by R. A. Farmer.

Milepost 8, 50 feet north of, west of track, iron post stamped "1522 T" ...	1,523.032
Milepost 5, 1,200 feet south of, 20 feet east of track; iron post stamped "1647 T"	1,647.436
Coulee City, 2.0 miles east of, 350 feet north of milepost 2, 200 feet north west of railroad crossing; iron post stamped "1711 T"	1,711.857
Coulee City, southeast corner of station, 4 feet east of; iron post stamped "1584 T"	1,584.089
Coulee City, 3.1 miles west of, 8 feet north of telephone pole 109, south of road; iron post stamped "1602 T"	1,602.292
Coulee City, 6.0 miles west of, 10 feet north of telephone pole 211; iron post stamped "2240 T"	2,240.821
T. 25 N., R. 27 E., 20 feet south of standard corner to secs. 32 and 33, 1.0 mile east of Baird; iron post stamped "2452 T"	2,452.612

From Elmira west along Northern Pacific Ry. to Coulee City.

Primary leveling by Philo Holbrook, Jr., in 1903–4; unadjusted value closing 3.853 feet low.

Hartline, on Northern Pacific Ry., east of station; iron post stamped "1911 T"	1,907.714
Hartline, 5.25 miles west of, at milepost 102; iron post stamped "1821 T" ..	1,816.726

COYOTE RAPIDS QUADRANGLE.

[Latitude 46° 30'–46° 45'; longitude 119° 30'–119° 45'.

From Locke School west along highways up left bank of Columbia River to Leslie's ranch.

Primary leveling in 1913 by D. S. Birkett and U. S. Corps of Engineers.

Locke School, 1 mile west of, southeast corner of sec. 36, T. 15 N., R. 26 E., on north side of road, spike in base of large gate post, marked "U. S. 668 B. M."	667.34
Wahluke, 1.8 miles down river from, at point where road reaches top of hill, 6 feet north of road; spike in base of mail-box post, marked "U. S. 661 B. M."	660.64
T. 14 N., R. 26 E., southwest corner of sec. 2, 200 feet east of corner, 15 feet north of gate at private entrance to H. Glanzman's ranch; iron post stamped "441 Wash 1913"	440.961
Wahluke, southeast corner of sec. 10, T. 14 N., R. 26 E., 10 feet west by 15 feet south of southeast corner of Koppen's ranch house, 200 feet north of river; iron post stamped "413" (U. S. Reclamation Service b. m., value= 413.075). (U. S. Engineers elevation, 412.36)	412.247

T. 14, N., R. 26 E., southeast corner of sec. 16; spike in base of corner fence post, marked "U. S. 407 B. M."	Feet. 407.26
Wahluke, 3.6 miles up river from, 200 feet north of river, 15 feet north of road, on top of boulder, point in circle of paint, marked "U. S. 403 B. M."	403.29
Wahluke, 4 miles up river from, 300 feet north of river, 40 feet south of road, on slight rise 0.2 mile upstream from line of east-west fence, witnessed by pile of stone 1.5 feet high; iron post stamped "409 Wash 1913".	408.408
Coyote Rapids pumping station, across river and a little upstream from nail in top of log, marked "408"	413.01
Haven, 1.2 miles downstream from, north of road spike in base of gate post, marked "U. S. 404 B. M."	413.52
Haven, northeast corner of sec. 3, T. 13 N., R. 25 E., on south side of school house steps, on top step; aluminum tablet stamped "469 Wash 1913"	471.702
T. 13 N., R. 25 E., northwest corner of sec. 3. extreme head of irrigation ditch along pumping plant, on top of concrete wall on south side; chiseled square painted "U. S. 467 B. M."	470.28
Haven School, 2 miles west of, on river road, 200 feet north of river, on south side of road. spike in base of gate post of corral gate, marked "U. S. 417 B. M."	416.96
Leslie's ranch, 0.7 mile downstream from, opposite white house, 60 feet north of river, 20 feet south of road, on top of large boulder; point in circle of paint, marked "U. S. 413 B. M."	412.61
Leslie's ranch house or Pete Reese log cabin, 700 feet east by 500 feet south of, in NE. $\frac{1}{4}$ sec. 6, T. 13 N., R. 25 E., near edge of river, in top of large basalt boulder, aluminum tablet stamped "407, also 406.610" (Reclamation Service b. m.)	406.209
Leslie's ranch, 0.3 mile up river from, 300 feet north of river, 40 feet south of road, in line of old fence, spike in base of post, marked "U. S. 418 B. M."	417.30

United States Engineers bench marks.

Jaeger's ranch, right (south) bank of river, on northeast corner of sill of windmill (U. S. Engineers b. m.)	424.44
Hanford Irrigation & Pumping Co.'s pumping station bench mark on door sill (U. S. Engineers b. m.)	413.88
Wahluke, also Koppen's ranch, at southeast corner of sec. 10, T. 14 N., R. 26 E., 10 feet west by 15 feet south of Koppen's ranch house, 200 feet north of river (U. S. Reclamation Service b. m.) (Engineers elevation 412.36).	412.247
Wahluke, across river from, in first bend of old wheel pumping plant, west of house; spike (U. S. Engineers b. m.)	396.85
This bench mark, not shown on topographic map, was established by U. S. Reclamation Service and recovered by D. S. Birkett.	
Leslie's ranch house, 700 feet east by 500 feet south of, in NE $\frac{1}{4}$ sec. 6, T. 13 N., R. 25 E., near edge of river, in top of large basalt boulder: aluminum tablet stamped "407" (also stamped 406.610 by Reclamation Service)	406.209

DAVENPORT QUADRANGLE.

[Latitude 47° 30'–48°; longitude 118°–118° 30']

From Canyon schoolhouse west down Spokane and Columbia rivers to Creston.

Primary leveling in 1903 by Philo Holbrook, jr.

Canyon schoolhouse, 100 feet from, beside road; iron post stamped "1285 T"	1,282.211
Halfway House on country road, 400 feet north of barn, near road to Davenport 15 miles distant; iron post stamped "1553 T"	1,550.745

T. 28 N., R. 37 E., quarter corner east side of sec. 19, at schoolhouse on road between Fort Spokane and Davenport; iron post stamped "1239 T".	Feet. 1,236.331
Fort Spokane, 0.5 mile south of, on bench alongside of road running east and west in sec. 29, T. 28 N., R. 36 E.; iron post stamped "1672 T"....	1,669.920
Peach post office, 3.5 miles west of, at foot of road to Creston and down Columbia, on Warren place; iron post stamped "1540 T".....	1,537.735

From Creston east along Northern Pacific Ry. to Mondovi

Fellows station; iron post stamped "2329 T".....	2,326.701
Rocklyn station; iron post stamped "2385 T".....	2,382.941
Davenport; iron post stamped "2408 T".....	2,405.619

DUNGENESS QUADRANGLE.

[Latitude 48°-48° 15'; longitude 123°-123° 15'.]

From Reeveton along highways to Dungeness Lighthouse and return.

Primary leveling by R. C. Seitz in 1917.

Port Angeles, 10.10 miles east of, 0.35 mile west of Reeveton, at T road south; in base of telephone pole; spike, painted "U. S. 169 B. M.".....	169.64
Reeveton station, about 450 feet east of, 30 feet south of railroad crossing; iron post stamped "Prim. Trav. Sta. No. 14 160 1917".....	160.326
Reeveton, in front of station; top of rail.....	159.1
Reeveton, 0.50 mile east of, in base of first telephone pole west of small irrigation ditch; spike, painted "U. S. 172 B. M.".....	172.51
Reeveton, 1.55 miles east of, on south side of road, in base of telephone pole; spike, painted "U. S. 161 B. M.".....	161.37
T road south.....	140.8
Reeveton, 2.55 miles east of, 1,300 feet east of T road south, 1,300 feet west of yellow house, in base of telephone pole; spike, painted "U. S. 131 B. M.".....	131.311
Reeveton, 3.55 miles east of, 6.10 miles southwest of Dungeness, on north side of road, at T road south to Cookburg; iron post stamped "Prim. Trav. Sta. No. 15 125 1917".....	125.386
Reeveton, 3.75 miles east of, 4.90 miles southwest of Dungeness, at bend in road, in base of telephone pole; spike, painted "U. S. 121 B. M."..	121.477
Dungeness, 3.75 miles southwest of, in front of R. Dickinson's house, in southeast corner of floor of bridge; roofing nail, painted "U. S. 72 B. M."..	72.86
Dungeness, 2.80 miles south of, 1,200 feet south of junction of roads, about 100 feet above foot of grade, in base of fence post; spike, painted "U. S. 62 B. M.".....	62.07
Dungeness, 2.00 miles south of, in southeast angle at crossroads, in root of 14-inch spruce tree; roofing nail, painted "U. S. 101 B. M.".....	101.11
Dungeness, 1.15 miles south of, in southwest angle at junction of roads, in base of telephone pole; spike, painted "U. S. 48 B. M.".....	48.91
Dungeness, west of (at old town of Dungeness), in southwest angle at junction of roads, in base of telephone pole; spike, painted "U. S. 49 B. M.".....	49.46
Dungeness, about 2 miles north of, on spit, in base of telephone pole; spike, painted "U. S. 20 B. M." (erroneously painted).....	5.54
New Dungeness Lighthouse, on southeast corner, in east side of top stone of foundation; center of a 2.5-inch cross within a 4-inch circle (established by Lieut. Com. A. S. Snow, 1884) (U. S. C. & G. S. b. m. 1). Elevation above mean low water 14.42 ft.; above mean tide level 9.82 ft. based on 52 high and 54 low waters.....	8.78

Dungeness Lighthouse, 1.05 miles west of; nail in log, painted "U. S. Z B. M."	Feet. 6.38
Dungeness Lighthouse, 2.24 miles west of; nail in log, painted "U. S. Y B. M."	8.14
Dungeness Lighthouse, 3.42 miles west of, nail in log; painted "U. S. X B. M."	7.34
Logging railroad trestle, at west end of; top of rail	8.8
Dungeness Lighthouse, 4.70 miles west of, 450 feet south of west end of logging railroad trestle, 10 feet east of track; top of small stump; roofing nail, painted "U. S. 10 B. M."	8.61
Top of east rail at road crossing	87.2
Dungeness Lighthouse, 5.80 miles west of, Old Port Angeles-Dungeness road crossing, in base of signpost; spike, painted "U. S. 118 B. M."	117.25
Dungeness Lighthouse, 5.80 miles west of, Old Port Angeles-Dungeness road crossing, 10 feet south of road, 30 feet east of railroad; iron post stamped "Prim. Trav. Sta. No. 16 121 1917"	119.981
Reeveton, 3.05 miles east by 0.90 mile north of, 7 miles southwest of Dungeness Lighthouse, 20 feet west of railroad, in base of 36-inch fir tree; roofing nail, painted "U. S. 113 B. M."	111.66

EATONVILLE QUADRANGLE.

[Latitude 46° 30'-47°; longitude 122°-122° 30'.]

At Cinebar.

Primary leveling in 1910 and 1913 by E. M. Bandli.

Silver Creek, 7.1 miles northeast of, 27 feet southeast of road intersection, on tree stump; copper nail marked "883.7"	883.74
Cinebar, 66 feet northeast of corner of school yard, in northeast corner of crossroads; iron post stamped "Prim. Trav. Sta. No. 46, 910"	910.074
Cinebar, 0.4 mile west from schoolhouse, 27 feet southeast of road intersection, in tree stump; copper nail marked "883.7"	883.76

From point near Mossyrock east along highway to Riffe (leveled twice).

Mossyrock, 0.9 mile west of, 18 feet south of road, in base of telephone pole; copper nail marked "617.7"	616.75
Mossyrock, 20 feet south of road, near fence, 200 feet southwest of post office; iron post stamped "668"	666.918
Mossyrock, 0.9 mile east of, 18 feet south of road, 25 feet southwest of culvert, in base of telephone pole; copper nail marked "700.4"	699.49
Mossyrock, 1.9 miles east of, 15 feet south of road and 30 feet east of private road intersection, in telephone pole; copper nail marked "738.673"	737.82
Mossyrock, 2.9 miles east of, 100 yards southeast of Y road intersection, 6 feet north of flagpole in yard of Richland school, district 206, ward 8; iron post stamped "793"	792.517
Riffe, 2.8 miles west of, 20 feet south of road, in root of 2-foot maple tree; copper nail marked "789.2"	788.35
Riffe, 2 miles west of, 50 feet northeast of bridge, 8 feet north of road, in top of 4-foot cedar stump; copper nail marked "563.5"	562.62
Riffe, 1.1 miles west of, 5 feet north of road, in top of 3½-foot cedar stump; copper nail marked "506.7"	505.85
Riffe, 220 feet west of post office, 25 feet north of road, 30 feet west of road intersection; iron post stamped "534"	532.889

From Riffe northeast along highway to Morton, thence southeast to Kosmos (part of circuit).

Riffe, 0.9 mile west of, 10 feet south of road, in root of 10-inch maple tree; copper nail marked "565.2"	564.35
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Riffe, 2.1 miles north of, 2 feet from west end of bridge, on north side of road, in root of hemlock tree; copper nail marked "897.4".....	Feet. 878. 60
Morton, 5.3 miles west of, on west edge of road, in root of 6-foot cedar tree; copper nail marked "1173.8".....	1, 173. 09
Morton, 4.4 miles southwest of, at summit, 15 feet west of school and 3 feet north of flagpole, 100 feet south of road; iron post stamped "1329".....	1, 328. 174
Morton, 3.2 miles southwest of, 4 feet northwest of road, on small hill, in bottom of telephone pole; copper nail marked "1045.8".....	1, 045. 03
Morton, 1.9 miles southwest of, 50 feet west of Mrs. Stout's front gate, west of road, in bottom of telephone pole; copper nail marked "1005.9".....	1, 005. 18
Morton, 1 mile southwest of, 6 feet east of T road intersection, southeast of Morton cemetery, in root of B. T. 1 4 S. No. 32; copper nail marked "929.5".....	928. 76
Morton, 18 feet south of railroad and street intersection, 3 feet east of telephone pole, 100 yards east of Morton Hotel; iron post stamped "945.3".....	944. 652
Morton, 1.2 miles east of, 10 feet south of road, 150 feet northeast of residence, in base of telephone pole; copper nail marked "972.5".....	971. 82
Morton, 2.3 miles south of, on northeast edge of road, in root of 18-inch fir tree; copper nail marked "997.5".....	996. 83
Morton, 2.6 miles south of, in angle of T road intersection, in corner of F. Harper's place, 100 feet southwest from house; iron post stamped "988".....	987. 132
Morton, 3.7 miles south of, on west edge of road, in root of 18-inch alder tree; copper nail marked "1020.3".....	1, 019. 62
Morton, 4.4 miles south of, on west edge of road, in root of 4.5-foot hemlock tree, 100 feet south of Y road; copper nail marked "1050.9".....	1, 050. 19
Morton, 5.2 miles south of, on south edge of road, in root of 5-foot cedar tree; copper nail marked "1027.9".....	1, 027. 27
Morton, 6 miles south of, on northwest edge of road, in root of 5.5-foot fir tree; copper nail marked "965.2".....	964. 54

From Morton northeast along Tacoma Eastern R. R. and highway to Park Junction (leveled twice).

Morton, 1 mile north of, 15 feet east of track, in root of 4-foot hemlock tree; copper nail marked "958.5".....	957. 80
Morton, 2.1 miles north of, 15 feet west of road and track intersection, in bottom of railroad crossing sign; copper nail marked "1009.1".....	1, 008. 49
Morton, 3 miles north of, 840 feet north of Lindburg, 15 feet south of west end of bridge GG 98; iron post stamped "1052".....	1, 051. 376
Morton, 3.3 miles north of, 10 feet south of track, in root of 2-foot hemlock stump; copper nail marked "1082.9".....	1, 082. 27
Morton, 4.4 miles north of, at Inland stop, 3 feet west of track, on pier of bridge GG 96 at south end; copper nail marked "1209.1".....	1, 208. 48
Morton, 5.6 miles north of, 3 feet northwest of track, on top of sixth pier from southwest end of bridge GG 94; copper nail marked "1345.7".....	1, 345. 14
Mineral, 7.2 miles south of, 15 feet southwest of center line at road crossing, 45 feet west of bridge GG 92; iron post stamped "1475".....	1, 474. 896
Mineral, 6.5 miles southwest of, 3 feet northwest of track, on stringer of bridge GG 88; copper nail marked "1541.8".....	1, 541. 27
Mineral, 5.6 miles southwest of, 80 feet southwest of cook house, on Peterman's spur, 7 feet west of track and about 4 feet northeast of telephone pole; iron post stamped "1636".....	1, 635. 555
Mineral, 5.1 miles southwest of, 3 feet east of track, in top of low 16-inch stump, in circle of paint; copper nail marked "1664.8".....	1, 664. 36

Mineral, 4.1 miles southwest of, 15 feet west of track, 4 feet south of telephone pole, 60 feet south of Pennsylvania Coal Co.'s office; iron post stamped "1681".....	Feet. 1, 680. 546
Mineral, 3.1 miles south of, 6 feet west of track, on timber pier of bridge GG 82; copper nail marked "1595.9".....	1, 595. 46
Mineral, 2 miles southwest of, at T-road crossing, 35 feet west of track near sawmill, in root of 2.5-foot fir stump; copper nail marked "1537.8"....	1, 537. 37
Mineral, 1.2 miles southwest of, 10 feet west of track, 12 feet north of road, in root of 2.5-foot hemlock tree; copper nail marked "1467.7".....	1, 467. 32
Mineral, 15 feet south of track, 50 feet southeast of station, 3 feet west of crossing sign opposite water tank; iron post stamped "1439".....	1, 438. 934
Mineral, 1 mile west of, 15 feet east of track, in top of 16-inch hemlock stump; copper nail in circle of paint marked "1373.1".....	1, 372. 63
Park Junction, 1.9 miles east of, 6 feet from crossing sign and 6 feet from track, in top of pile near river; copper nail marked "1333.3".....	1, 332. 88
Park Junction, 0.3 mile south of, 3 feet north of telephone pole 0-31, 30 feet south of road, 30 feet northeast of Nisqually River railroad bridge, 18 feet east of track; iron post stamped "1337".....	1, 336. 033
From Kapowsin south and east along Tacoma Eastern R. R. to Elbe (double-rodged line).	
Electron, 0.5 mile west of, 20 feet east of track, 9 feet south of road, 4 feet west of corner between secs. 5 and 32, Tps. 17 and 18 N., R. 5 E.; iron post stamped "583".....	582. 768
Kapowsin, in northeast corner of intersection of Trewella Avenue and street opposite Presbyterian Church, 0.5 foot west of northeast corner of fence post, 0.5 foot north of corner; iron post stamped "630".....	629. 610
Holz, 18 feet northeast of station, 13 feet northwest of track; iron post stamped "564".....	563. 530
Holz, 1.3 miles southwest of, 15 feet southwest of private road, 2 feet southwest of railroad signpost, 10 feet southeast of track; iron post stamped "554".....	553. 938
Eatonville, 20 feet north of road crossing at station, 18 feet northwest of railroad, 2 feet east of railroad crossing signpost; iron post stamped "800".....	800. 179
Lagrande, 18 feet east of railroad, 15 feet north of road in front of post office and Hotel Lagrande; aluminum tablet stamped "942".....	941. 554
Lagrande, 3.2 miles southeast of, west of track, in stump; copper nail....	994. 64
Lagrande, 3.6 miles southeast of, southwest end of trestle; copper nail....	1, 014. 16
Alder, 35 feet west of first road crossing west of station, 18 feet south of railroad, 2 feet northwest of first telegraph pole west of road crossing at station; iron post stamped "1148".....	1, 147. 387
Alder, 1 mile east of, 4 feet south of track, in stump; copper nail.....	1, 246. 02
Alder, 2.2 miles east of, 9 feet south of track, in large stump; copper nail marked "1266.1".....	1, 265. 73
Alder, 3.3 miles east of, 10 feet north of track, 15 feet west of road at crossing, 120 feet south of new county road; iron post stamped "1207".....	1, 206. 873
Alder, 4 miles east of, 4 feet northeast of track, in stump at curve; copper nail.....	1, 174. 02
Alder, 5.4 miles east of, at road crossing, 50 feet northeast of track, 15 feet north of road, in stump; copper nail marked "1173.3".....	1, 172. 95
Elbe, 50 feet east of track, 18 feet north of road crossing just north of station, 2 feet north of railroad signpost; iron post stamped "1210".....	1, 210. 077

From Elbe east along Tacoma Eastern R. R. to Ashford (from a double-rodde line redetermined by a single line).

Elbe, 1 mile east of, 30 feet north of track, in root of 3.5-foot fir stump; copper nail.....	Feet. 1,363.34
Park Junction, 0.25 mile east of, 20 feet east of switch, 10 feet north of track, in root of cedar stump; iron spike marked "1344.1".....	1,343.69
Elbe, 3.6 miles east of, 15 feet north of track, in top of stump; copper nail marked "1386.2".....	1,385.84
Elbe, 4.5 miles southeast of, 15 feet south of track, 3 feet northwest of telegraph pole near logging camp; iron post stamped "1439".....	1,438.254
Elbe, 5.6 miles east of, 6 feet south of track, in top of stump; copper nail marked "1514.2".....	1,513.79
Ashford, 1.5 miles west of, 10 feet northwest of track, in top of 3-foot black stump; copper nail marked "1599.2".....	1,597.28
Ashford, 0.25 mile west of, at road crossing, in stump; copper nail marked "1737.58".....	1,737.11
Ashford, 12 feet south by 20 feet west of T-road intersection to south; iron post stamped "1771".....	1,770.869

ELLENSBURG QUADRANGLE.

[Latitude 46° 30'–47°; longitude 120° 30'–121°.]

From Ellensburg along Northern Pacific Ry. to Thrall and from Wenas to Yakima.

Precise leveling by the U. S. Coast and Geodetic Survey.

Ellensburg, in stone foundation of Northern Pacific roundhouse, on west side of building, 8 meters south of northwest door; bottom of square hole, lettered "U. S. B. M." (C. & G. S. "Q ₁ ").....	1,516.116
Ellensburg, in north stone front of Washington State Bank, 1.25 meters above sidewalk; red metal disk (C. & G. S. "R ₁ ").....	1,536.841
Ellensburg, in yard surrounding residence of Ernest Maddux, 1.33 meters from east fence, 1.15 meters north of south fence; red metal cap on iron pipe (C. & G. S. "S ₁ ").....	1,514.974
Thrall, opposite mile pole 122, 20 meters south of nearest rail, 10 meters north of wagon road; red metal cap on iron pipe (C. & G. S. "T ₁ ").....	1,428.324
Wenas, 75 meters west of station, opposite mile pole 94, 10 meters north of nearest rail; red metal cap on iron pipe (C. & G. S. "Y ₁ ").....	1,097.734
Yakima, in east Northern Pacific Ry. park, 6.1 meters east of west fence inclosing the park; red metal disk on top of iron pipe (C. & G. S. "Z ₁ ").....	1,065.198
Yakima, in vertical face of stone wall at northeast corner of Sloan's drug store, 0.32 meter east of door, 0.33 meter from edge of wall, 1.2 meters above sidewalk; red metal disk (C. & G. S. "A ₂ ").....	1,067.730
Yakima, on east side of First National Bank building, in upper surface of stone doorsill of stairway entrance, 0.18 meter from outer edge of doorsill; copper bolt lettered "U. S. B. M." (C. & G. S. "B ₂ ").....	1,062.701
Yakima, in surface of cement walk leading from residence of Mrs. Moore, 222 North Second Street, to sidewalk, 2.7 meters west of sidewalk, 0.61 meter south of north edge of cement walk; red metal disk (C. & G. S. "C ₂ ").....	1,068.761

From Ellensburg southeast along Northern Pacific Ry. to Thrall.

Precise leveling in 1898 by H. S. Crowe.

Ellensburg, in front of telegraph office, top of rail.....	1,510.6
Ellensburg, in top of brick pier with stone coping in State Normal School grounds; bronze tablet stamped "1571 T".....	1,571.604
Thrall siding; base of rail center of main line.....	1,442.2

From Elah southwest along Northern Pacific Ry. to Yakima, thence southeast to Old Yakima.

Naches River, opposite where it empties into Yakima River, in center of west end of stone pier of railroad bridge; copper plug stamped "1090 T".....	Feet. 1,090.493
Yakima, opposite station, in pilaster of northwest corner of entrance to city hall on Front Street; aluminum tablet stamped "1067 T".....	1,067.392
Yakima, in front of station; top of rail.....	1,067.5

From Ellensburg west along road through Manastash Canyon to T. 17 N., R. 16 E.

Primary leveling in 1899 by H. K. Kalloch.

T. 17 N., R. 18 E., quarter corner on south side of sec. 10, 115 feet east of gate to schoolhouse, 5 feet south of fence, 22 feet west of fence corner; iron post stamped "1546 T".....	1,546.648
T. 17 N., R. 17 E., sec. 15, first ranch in Manastash Canyon, 350 feet southwest of house, 35 feet southwest of gate, 15 feet north of road; iron post stamped "2135 T".....	2,134.880
T. 17 N., R. 16 E., sec. 13, 3 feet east of northeast corner of cabin, 165 feet west of section line, 30 feet south of edge of bench above south fork of Manastash Creek; iron post stamped "2731 T".....	2,731.196

From Ellensburg southwest along road via Shushuskin Canyon to Wenas Creek, thence southeast down Wenas Creek to Selah station.

T. 17 N., R. 18 E., sec. 34, head of Shushuskin Canyon, 15 feet south of road, 25 feet east of junction with Durr road to Yakima; iron post stamped "2387 T".....	2,387.339
T. 16 N., R. 18 E., northwest corner of sec. 6, 500 feet south of road, 16 feet southeast of fence corner; iron post stamped "2837 T".....	2,837.264
T. 16 N., R. 17 E., sec. 5, summit of pass between Umptanum and Wenas creeks, 12 feet south of road; iron post stamped "3128 T".....	3,128.084
T. 16 N., R. 16 E., sec. 13, mouth of Kittitas Canyon, 1 foot north of fence, 8 feet south of 3.5-foot pine tree, 45 feet south of road forks, 500 feet southwest of junction of Ellensburg-Yakima road with road up Wenas Creek; iron post stamped "2266 T".....	2,266.550
T. 16 N., R. 17 E., sec. 32, 65 feet north of east gate to barn of Burge's ranch, 500 feet northwest of house, 5 feet south of road, in small group of young trees; iron post stamped "2008 T".....	2,008.589
T. 15 N., R. 17 E., sec. 3, 1,000 feet west of Chamberlain ranch, in top of flat rock shelf 15 feet south of road, in bend around point of hill; bronze tablet stamped "1883 T".....	1,883.841
T. 15 N., R. 17 E., northeast corner of sec. 24, 90 feet south of bridge over branch of Wenas Creek, at road fork to Yakima via Selah Valley, 2 feet north of fence and 15 feet south of Naches River road; iron post stamped "1622 T".....	1,622.206
T. 14 N., R. 18 E., southwest corner of sec. 2, 25 feet east of old Durr road at junction with Wenas road and 50 feet north of main road, 3 feet south of fence, 450 feet west of Ruby house; iron post stamped "1318 T".....	1,318.315

From Quinn's Road on Wenas Creek southwest across bridge to Naches River, thence southeast to Yakima.

T. 14 N., R. 17 E., north side of sec. 2, summit of pass between Wenas Creek and Naches River, 25 feet southwest of road; iron post stamped "1917 T".....	1,917.321
T. 14 N., R. 17 E., north side of sec. 11, 2 feet northeast of fence, 50 feet southwest of road, 845 feet northwest of lane leading past schoolhouse; iron post stamped "1502 T".....	1,502.421

T. 14 N., R. 18 E., sec. 30, 1,000 feet north of schoolhouse, 5 feet west of junction of Naches road with lane, inside wire fence corner; iron post stamped "1331 T".....	Feet. 1, 331. 316
T. 13 N., R. 18 E., sec. 9, 300 feet north of schoolhouse at Cowiche Creek road crossing, 100 feet west of road, 60 feet east of irrigating ditch siphon, in top of boulder 5 by 9 feet; bronze tablet stamped "1180 T".....	1, 181. 009

West up south fork of Wenas Creek and southeast down Naches River to sec. 11, T. 14 N., R. 17 E.

T. 16 N., R. 15 E., about sec. 13 (unsurveyed), 2 miles east of summit of upper pass between Wenas Creek and Naches River, 30 feet south of road at east end of open flat between blazed pine trees each 12 feet distant; iron post stamped "3863 T".....	3, 863. 676
T. 16 N., R. 15 E., about sec. 21 (unsurveyed), 3 feet southwest of northwest corner of dwelling house of Mehaffy ranch, at junction of Naches and Wenas roads, 0.8 mile northwest of upper ford of Naches River; iron post stamped "2138 T".....	2, 139. 242
T. 15 N., R. 15 E., northeast corner of sec. 13, 3 feet west of gate to Stevens house, Buckeye ranch, 2 feet south of fence, 10 feet north of road; iron post stamped "1855 T".....	1, 855. 049
T. 15 N., R. 16 E., sec. 34, 125 feet north of house at west end of oak flat, F. V. Hansen ranch, east end of grade over hill, 75 feet south of cliff talus, in small point of outcropping ledge; bronze tablet stamped "1661 T"....	1, 661. 304
T. 15 N., R. 17 E., sec. 31, inside fence at Lamberson ranch, 4 feet west of gate leading to house, 50 feet west of road crossing at Wapata ditch; iron post stamped "1568 T".....	1, 568. 328

Southwest up Tieton River from mouth to T. 14 N., R. 15 E.

T. 14 N., R. 16 E., 258 feet S. 12° 30' E. of quarter corner between secs. 2 and 3; iron post stamped "1681 T". (Reset by W. C. Richings, engineer of Yakima, Wash.).....	1, 704. 819
T. 14 N., R. 15 E., about sec. 13 (unsurveyed), 0.8 mile west of Harper ranch, 1,000 feet west of west branch of dry watercourse from deep canyon to north, 60 feet north of cleared field and 600 feet north of Tieton River, 9 feet south of 25-foot outcropping point at base of high rock cliff; iron post stamped "1958 T".....	1, 958. 904

From Naches River west up Cowiche Creek and east down Atanum Creek to Old Yakima.

T. 13 N., R. 17 E., sec. 3, 60 feet northeast of low point of divide between North and South forks of Cowiche Creek, outside of wire fence, 30 feet northwest of main road; iron post stamped "1570 T".....	1, 570. 362
T. 14 N., R. 17 E., sec. 31, lane leading to Oak Grove creamery, 10 feet west of gate, 3 feet south of fence; iron post stamped "1824 T".....	1, 823. 734
T. 14 N., R. 16 E., sec. 33, 675 feet east of mouth of McDaniel Canyon, 100 feet north of creek, 50 feet north of road, in face of outcropping lava formation at base of low basalt cliff; bronze tablet stamped "2204 T".....	2, 204. 008
T. 13 N., R. 16 E., in northwest corner of sec. 18, 100 feet west of forks of main road with road to Louis Christensen ranch, 20 feet south of road and 3 feet north of branch road, at forks of South Fork of Cowiche Creek, on granite ledge; bronze tablet stamped "2632 T".....	2, 631. 913
T. 13 N., R. 15 E., sec. 27, summit of pass between Cowiche and Atanum creeks, 0.8 mile from Cowiche Creek, in shallow sag at head of draw, 0.8 mile above sawmill, blazed pines are east, south, and west; iron post stamped "3686 T".....	3, 685. 485

T. 12 N., R. 15 E., sec. 2, opposite Hinckle ranch house, northeast side of road and 3 feet from fence, 300 feet southeast of Nasty Creek road crossing; iron post stamped "2463 T"	Feet. 2, 462. 335
Tampico, sec. 18, T. 12 N., R. 16 E., 100 feet east of old store, at forks of road to north and south and at forks of Atanum Creek, south side of main road, 2 feet north of fence and 6 feet east of fence corner; iron post stamped "2127 T"	2, 116. 367
T. 12 N., R. 17 E., 930 feet east of west side of sec. 18, 30 feet north of road, 9 feet west of wire fence corner; iron post stamped "1703 T"	1, 692. 202
T. 12 N., R. 17 E., west side of sec. 10, 275 feet southeast of schoolhouse, 3 feet inside corner of wire fence on northeast corner of crossroads; iron post stamped "1479 T"	1, 468. 725
T. 12 N., R. 18 E., west side of sec. 3, 600 feet southeast of schoolhouse, 45 feet north of road, in jog of fence; iron post stamped "1066 T"	1, 066. 295

From Harper ranch west along Tieton River.

T. 14 N., R. 15 E., 6 miles west of Harper ranch, 40 feet west of creek, north of trail on left bank and 150 feet north of Tieton River, opposite a steeple rock about 75 feet wide and 250 feet high; iron post stamped "2236 T" ..	2, 237. 180
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Bench marks established by the United States Reclamation Service.

T. 13 N., Rs. 17 and 18 E., quarter corner between secs. 19 and 24, 8 miles west of Yakima, 40 feet north of Cowiche telephone line, 20 feet north of Cowiche road, 3 feet north of fence corner and corner of Alvin Bair's homestead; iron post stamped "1354"	1, 354. 210
T. 14 N., R. 16 E., 30 feet southwest of northeast corner of sec. 13, 20 feet west from range line, 10 feet west and 3 feet south of road at right-angle bend, 0.25 mile east of Louis ranch house, 0.5 mile north of North Fork schoolhouse; iron post stamped "1971"	1, 971. 128
T. 14 N., R. 16 E., on line between secs. 10 and 11, 600 feet north of corner of secs. 10, 11, 14, and 15, 70 feet north of North Fork of Cowiche Creek, 800 feet east of house on French place, 30 feet north of road and fence corner, beside wire fence; iron post stamped "2183 T"	2, 183. 208
T. 14 N., R. 17 E., near center of sec. 8, 0.25 mile from small lake and reservoir, 800 feet southeast of Lake triangulation signal, 100 feet east of reservoir embankment, 80 feet southeast of Hill house, 3 feet inside southeast corner of fence; iron post stamped "1957 T"	1, 957. 111
T. 14 N., R. 17 E., 40 feet southeast of northwest corner of sec. 27, 30 feet east of fence corner, 2 feet north of fence; iron post stamped "1872 T" ..	1, 872. 163
T. 13 N., R. 17 E., 300 feet south of northeast corner of sec. 12, 2,000 feet southeast of triangulation signal Burlingame, 50 feet west of range line, 200 feet south of scab rock hill, 50 feet east of spur of scab rock leading from hill; iron post stamped "1731 T"	1, 731. 231

EPHRATA QUADRANGLE.

[Latitude 47° 15'-47° 30'; longitude 119° 30'-119° 45'.]

From Winchester northeast along Great Northern Ry. to milepost 1593.

Primary leveling in 1903 by R. A. Farmer and in 1909 by C. H. Semper.

Milepost 1605, 200 feet east of, south of track, in base of west post of emergency rail support; spike	1, 320. 03
Milepost 1603, 1,100 feet east of, 30 feet north of track, in top of boulder; aluminum tablet stamped "1261 T"	1, 262. 035

	Feet.
Milepost 1601, top of stake at foot of (railroad engineers' bench mark).....	1, 246. 66
Ephrata, southwest corner of Mercantile Co.'s store, 6 feet west of; iron post stamped "1273 T"	1, 272. 715

From point 5 miles northwest of Moses Lake northwest along highway to Ephrata.

Moses Lake, 6.0 miles north of, 8 feet southwest of road, in 2 by 2 foot boulder 1 foot above ground; aluminum (?) tablet stamped "1274 T" (reported broken off, only the stem left)	1, 274. 199
Moses Lake, 6.0 miles north of, 4 miles south of Ephrata, 1,080 feet north of fork in road, 30 feet east of road, at telephone pole; iron post stamped "1275"	1, 275. 547

From Ephrata south along road 5 miles.

Ephrata, 3.7 miles south of, at curve in road to south, about half way uphill, 5 feet east of road, in top of large granite boulder; aluminum tablet....	1, 283. 102
Ephrata, 4.9 miles south of, on west margin of road, on large rock; marked "U. S. □ B. M. 1270"	1, 270. 53

FORDNAH QUADRANGLE.

[Latitude 46° 30'–46° 45'; longitude 119° 15'–119° 30'.]

From Ringold northwest along highway up left bank of Columbia River to Locke School.

Primary leveling in 1913 by D. S. Birkett and U. S. Corps of Engineers.

Ringold schoolhouse, 0.6 mile south of, at junction of river and post-office roads, southwest corner; spike in base of fence post, marked "U. S. 433 B. M."	433. 09
T. 12 N., R. 28 E., in sec. 24, at northwest corner of Ringold schoolhouse yard, 15 feet east of corner; iron post stamped "392 Wash 1913"	391. 987
Ringold School, 0.9 mile northwest of, 0.5 mile south of Nagel's house, on private road down river, on east side of entrance to alfalfa field; spike in gate post, marked "U. S. 374 B. M."	374. 50
Ringold School, 1.5 miles northwest of, 300 feet south of house on Nagel's ranch, on power-line pole in front of pumping plant; spike in base of pole, marked "U. S. 380 B. M."	379. 75
Ringold School, 2.5 miles north of, 200 feet east of river road, at intersection of river road and road to east; spike in base of line pole, marked "U. S. 406 B. M."	405. 75
Hanford, 4.9 miles south of, on east side of river, 40 feet west of river road, 40 feet east of pumping plant on Pioneer ranch; iron post stamped "388 Wash 1913"	388. 273
Hanford, 3.6 miles south of, on east side of river, at intersection of river road with road from west, 15 feet east of road; spike in base of telephone pole, marked "U. S. 423 B. M."	422. 70
Pioneer ranch, 1.9 miles north of, at mouth of deep ravine, 15 feet west of road; spike in base of gate post, marked "U. S. 418 B. M."	418. 18
Hanford, 2 miles south of, 2,000 feet east of river, on line between secs. 32 and 33, near northwest corner of sec. 33, T. 13 N., R. 29 E., near corner of O. G. Hall's field, 150 feet west of present road, 30 feet north of fence corner; iron post stamped "438 Wash 1913"	438. 297
Hanford, 0.6 mile south of, 0.7 mile east of river, northwest corner fence post at private road intersection; spike in base, marked "U. S. 428 B. M."	427. 95
Hanford Ferry, 0.5 mile east of, at intersection of Ferry road with road up river, in southwest corner; spike in base of large fence post, marked "U. S. 421 B. M."	421. 31



T. 13 N., R. 28 E., SE. $\frac{1}{4}$ sec. 19, 1 mile east of and across river from Hanford, on top of high bluff, 550 feet above river, in line with main street of Hanford, 250 feet east of point where cliff breaks off sharp; iron post stamped "931 Wash 1913".....	Feet. 931.276
T. 13 N., R. 28 E., southwest corner of sec. 18, near Bair's ranch house; spike in base of corner fence post, marked "U. S. 923 B. M.".....	923.22
T. 13 N., R. 27 E., southwest corner of sec. 12; spike in base of corner fence post, marked "U. S. 890 B. M.".....	889.73
T. 13 N.; R. 27 E., northwest corner of sec. 12, 30 feet south of present fence corner; iron post stamped "840 Wash 1913".....	839.386
T. 13 N., R. 27 E., northeast corner of sec. 2; spike in base of large fence post, marked "U. S. 745 B. M.".....	745.34
White Bluffs, 2.9 miles southeast of, 1.5 miles east of river, on west side of road; spike in base of gate post, marked "U. S. 700 B. M.".....	700.15
T. 14 N., R. 27 E., probably southwest corner of sec. 26, 30 feet north by 30 feet east of corner of fence; iron post stamped "684 Wash 1913".....	684.149
White Bluffs, 1 mile southeast of, 0.6 mile east of river, at point where road east from Bluffs reaches top of hill, 300 feet south of homestead shack, fork of roads, one leading up river; spike in base of corner fence post, marked "U. S. 661 B. M.".....	660.93
White Bluffs, southeast corner of Nelson and Almond streets; bench mark on telegraph pole (U. S. Engineers b. m.).....	390.19
White Bluffs, 225 feet northwest of saloon, on Walnut Street; wire pin bent over on top of 4-foot post (U. S. Engineers b. m.).....	391.16
White Bluffs, 3 miles upstream from, 0.3 mile east of edge of bluff, 5 feet south of present wagon road through sand dunes, witnessed by large loose granite boulder on west of road; iron post stamped "662 Wash 1913".....	661.366
T. 14 N., R. 27 E., northwest corner of sec. 9, 75 feet south of homestead shack; spike in base of post, marked "U. S. 678 B. M.".....	678.21
Locke schoolhouse, 0.4 mile south of, in very large gate post; spike in base, marked "U. S. 660 B. M.".....	659.49
Locke schoolhouse (district No. 84), 40 feet north by 30 feet east of school building, in yard, at northeast corner of sec. 6, T. 14 N., R. 27 E.; iron post stamped "674 Wash 1913".....	674.328

Near northwest corner of quadrangle.

Leveling in 1916 by D. S. Birkett.

T. 14 N., R. 27 E., northwest corner of sec. 6, south side of road, corner fence post; copper nail in base of; painted "U. S. 667 B. M.".....	666.27
Locke schoolhouse (district 84), 40 feet north by 30 feet east of school building, in yard, at northeast corner of sec. 6, T. 14 N., R. 27 E.; iron post stamped "674 Wash 1913".....	674.328
Locke schoolhouse (district 84), 0.4 mile south of, in base of very large gatepost; spike marked "U. S. 660 B. M." (the gatepost is leaning badly).....	659.49

FORT SIMCOE QUADRANGLE.

[Latitude 46°-46° 30'; longitude 120° 30'-121°.]

From Parker siding along county road to Fort Simcoe.

Primary leveling in 1903 by C. E. Hill and R. B. Shaw.

Parker siding, 100 feet west of cattle guard of Northern Pacific Ry., 100 feet north of intersection of Toppenish and Fort Simcoe roads; iron post stamped "937 T".....	937.835
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Parker siding, 3 miles southwest of, 6 feet south of road; iron post stamped "923 T"	Feet. 923.866
Parker siding, 6 miles southwest of, 8 feet south of road; iron post stamped "912 T"	912.683
Parker siding, 9 miles southwest of, in road, between two wagon tracks; iron post stamped "867 T"	867.783
Bur Lake, 200 feet north of, 6 feet south of road, at turn in fence; iron post stamped "844 T"	844.608
Bur Lake; water level, Apr. 14, 1903	839
Luke ranch, corner of fence 10 feet north of road; iron post stamped "892 T"	892.272
Luke ranch, 3 miles southwest of, 10 feet south of road at fence corner; iron post stamped "988 T"	988.526
Simcoe Creek; water level under bridge, Apr. 20, 1903	991.76
Simcoe Creek bridge, 2 miles southwest of, at forks of road, 30 feet west of fence corner; iron post stamped "1075 T"	1,075.625
Fort Simcoe, in yard of Indian agent's residence, at northeast corner of fence; iron post stamped "1427 T"	1,427.619

From Fort Simcoe along county road and trail to Bush Creek.

Abraham Lincoln's ditch, at road crossing; water level, Apr. 27, 1903	1,296
Harbaugh ranch, 1.3 miles south of, 60 feet south of bridge over Toppenish River, in forks of road; iron post stamped "1312 T"	1,313.066
Bridge over Toppenish River, 5 miles south of, 150 feet east of edge of first pine timber, 10 feet north of road; iron post stamped "2716 T"	2,716.674
Reservation sawmill (abandoned), 0.6 mile southwest of, 4 feet west of road; iron post stamped "3077 T"	3,077.936
Reservation boundary, 1.9 miles southwest of, in forks of road to block-house and Hopper mill, 8 feet north of, bearing signboard; iron post stamped "3416 T"	3,417.014
Bush Creek, at road crossing; water surface, May 12, 1903	3,078.1

From Fort Simcoe along county road and trail to Rattlesnake Ridge.

Fort Simcoe, 3.4 miles north of, 60 feet west of road, on summit; iron post stamped "1437 T"	1,437.573
Simcoe Creek, at road crossing; water surface, May 25, 1903	1,236.99
Sam Abraham house, 15 feet southwest of southwest corner of, 7 feet west of road, at turn; iron post stamped "1351 T"	1,351.537
Tzapass Creek ford, 0.3 mile northwest of, 450 feet north of Tzapass Creek, 110 feet south of road, on small road 60 feet in width; iron post stamped "1615 T"	1,615.615
Idleat Creek, 1 mile west of mouth of, 100 feet south of trail up ridge, on scab rock slope, small mound 80 feet in diameter; iron post stamped "2580 T"	2,580.648

NOTE.—The following are United States Reclamation Service bench marks in Tps. 10 and 11 N., R. 18 E.:

T. 10 N., R. 18 E., northeast corner of sec. 22; nail in fence corner post	786.1
T. 10 N., R. 18 E., northeast corner of sec. 22, 1 foot south of fence, 6 feet east of apex of jog to west in north-south fence; iron post stamped "785"	786.174
T. 10 N., R. 18 E., northeast corner of sec. 15 (Castile's bench mark 794.29)	793.9
T. 10 N., R. 18 E., northeast corner of sec. 10 (Castile's bench mark 795.94)	796.9
T. 10 N., R. 18 E., northeast corner of sec. 21	796.4
T. 10 N., R. 18 E., quarter corner east side of sec. 16	794.8
T. 10 N., R. 18 E., northeast corner of sec. 4; iron post stamped "803"	809.023

T. 11 N., R. 18 E., northeast corner of sec. 21; iron post stamped "868" ..	869.222
T. 12 N., R. 18 E., southeast closing corner of sec. 33; iron post stamped "970"	971.520

GATE QUADRANGLE.

[Latitude 46° 30'-47°; longitude 123°-123° 30'.]

From point 3 miles northwest of Centralia northwest along Northern Pacific Ry. to Gate, thence northeast to Littlerock.

Primary leveling in 1912-13 by E. M. Bandli.

Centralia, 4.5 miles northwest of, 9 feet southeast of private-road crossing, 5 feet east of track; iron post stamped "Prim. Trav. Sta. No. 22, 163, 1912"	163.084
Centralia, 5.4 miles northwest of, 10 feet east of track, 12 feet north of road, in railroad-crossing signpost; copper nail marked "161.3"	161.22
Centralia, 6.2 miles northwest of, 6 feet east of track, 25 feet north of road intersection; iron post stamped "Prim. Trav. Sta. No. 23, 162, 1912"	161.553
Centralia, 7 miles northwest of, 40 feet north of track and 30 feet northwest of road at crossing, in telephone pole; copper nail marked "161.7"	161.61
Centralia, 7.9 miles northwest of, in northeast corner of bridge crossing over private road; nail in circle of paint marked "160.8"	160.69
Centralia, 8.9 miles northwest of, 40 feet east of track, on telegraph pole; nail in circle of paint marked "159.2"	159.15
Centralia, 9.9 miles northwest of, 60 feet north of track near first milepost from Rochester, in gatepost of private road; copper nail marked "155.1" ..	155.03
Rochester, 90 feet west of station, 7 feet north of track; iron post stamped "Prim. Trav. Sta. No. 149, 1912"	148.673
Rochester, 0.5 mile west of, 10 feet north of track, 200 feet west of Milwaukee track, in railroad-crossing signpost; copper nail marked "141.9"	141.85
Rochester, 1.8 miles northwest of, 40 feet northeast of track, 10 feet east of private road at crossing, in stump; copper nail marked "113.3"	113.19
Gate, 0.2 mile northeast of, 10 feet north of track at Y; iron post stamped "Prim. Trav. Sta. No. 25, 122, 1912"	120.604
Gate, 1.4 miles northeast of, west of track, in telegraph pole; nail in circle of paint, marked "106.8"	106.66
Gate, 2.5 miles northeast of, 3 feet east of track, on northeast end of bridge; nail in circle of paint, marked "104.6"	104.50
Gate, 3.9 miles northeast of, 8 feet east of track, 20 feet southwest of road at crossing; iron post stamped "Prim. Trav. Sta. No. 26, 126, 1912"	125.736
Gate, 4.4 miles northeast of, on railroad-crossing signpost; copper nail in circle of paint, marked "134.5"	134.39
Gate, 5.7 miles northeast of, 40 feet north of track, on telephone pole; copper nail in circle of paint, marked "162.3"	162.22
Gate, 6.5 miles northeast of, 40 feet west of track, in telegraph pole; copper nail marked "144.6"	144.50
Littlerock, 60 feet north of station, 9 feet east of track at road crossing; iron post stamped "Prim. Trav. Sta. No. 27, 138, 1912"	137.608
Littlerock, 0.7 mile north of, 15 feet east of track, 15 feet south of road at crossing, in railroad-crossing signpost; copper nail marked "163.1"	162.97

GLACIER PEAK QUADRANGLE.

Latitude 48°-48° 30'; longitude 121°-121° 30'.

From Monte Cristo along Northern Pacific Ry. to point near Silverton.

Primary leveling in 1897 by G. H. Pratt and John Graff, and in 1898 by L. D. Ryus.

Sauk River bridge, 60 feet west of west end of, 30 feet south of center of track, on 26-inch hemlock stump.	2 302.12
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Barlow Pass station, about 0.5 mile east of, 30 feet north of center of track on hemlock stump with wide-spreading roots.....	Feet. 2, 312. 71
Barlow Pass station 12 feet east of, 12 feet north of center of track, on 30-inch larch stump.....	2, 346. 60
Barlow Pass about 4,200 feet west of, near point of 5° curve left, 15 feet south of center of track, on 24-inch hemlock stump.....	2, 242. 38
Milepost 36, 400 feet west of, 15 feet south of track, on 30-inch hemlock stump.....	2, 203. 85
Milepost 34, 350 feet west of, on 36-inch hemlock stump.....	1, 927. 77

From Barlow Pass along highway down Sauk River to Darrington.

Barlow Pass station, about 0.25 mile northeast of, 10 feet east of wagon road, 150 feet north of long puncheon incline on road, on 10-inch hemlock tree.....	2, 249. 64
Barlow Pass station, about 0.5 mile northeast of, on root of double hemlock tree having 24-inch and 30 inch trunks, 15 feet west of wagon road, at station 37+50 on Goat Lake electric line survey.....	2, 220. 64
Sauk River, junction of road from Barlow Pass with road along river on 28-inch hemlock tree.....	2, 202. 54
Sauk River, junction of road from Barlow Pass with road along river, about 1,600 feet north of, on west edge of wagon road, on 20-inch hemlock tree.....	2, 192. 62
County road milepost 29 about 800 feet south of, on west edge of road, on 30-inch hemlock tree.....	2, 156. 08
County road milepost 29, about 1,100 feet north of, west side of wagon road at point where creek 10 feet wide first touches road on east, on 30-inch hemlock tree.....	2, 029. 80
Goat Lake wagon road, intersection with Sauk River road, on 5-foot cedar tree.....	1, 953. 97
Goat Lake wagon road, intersection with Sauk River road, about 1,800 feet north of, 150 feet south of old bridge site, west side of road, on 24-inch hemlock tree.....	1, 810. 28
Elliott Creek, about 200 feet north of mouth of, 80 feet north of bridge site, on east side of road, on 36-inch hemlock tree.....	1, 698. 86
Elliott Creek, about 750 feet north of mouth of 150 feet north of narrow strip of bottom land near foot of rise in road, 15 feet west of road, on 20-inch larch tree.....	1, 645. 34
Elliott Creek, about 1 mile north of, west side of road, top of steep hill sloping north, on 48-inch hemlock tree.....	1, 578. 61
Milepost 25 about 1 mile south of, 30 feet east of right bank of river, 10 feet west of road, on 36-inch cedar tree.....	1, 498. 39
Milepost 25 50 feet north of, creek crosses under bridge about 12 feet above water, 5 feet west of road, on 15-inch alder tree.....	1, 370. 70
Orient, at junction of north and south forks of Sauk River about 140 feet southeast of meander corner on southwest bank of north fork meander corner is on line between secs. 9 and 16 T. 30 N., R. 11 E., in granite boulder 4 by 6 feet and 2.5 feet above ground, copper bolt stamped "1241".....	1, 243. 31
Milepost 23, about 1,080 feet north of, about one-third of distance up the second hill of "pitch" after passing creek, west side of road, on 30-inch cedar tree.....	1, 193. 35
Milepost 22 about 700 feet south of, 75 feet south of bridge across small creek on south side of clearing east side of road on granite boulder.....	1, 161. 54
Milepost 22, about 3,350 feet north of, 150 feet north of cabin between road and river, east side of road, on 36-inch hemlock tree.....	1, 098. 96

	Feet.
Milepost 21, about 20 feet north of, west side of road, on 36-inch cedar tree.	1, 077. 34
T. 1 N., R. 11 E., secs. 29, 30, 31, and 32, on bearing tree for corner to, west side of road, 4-foot cedar tree.....	1, 035. 44
Pugh ranch, 500 feet north of, west side of road, on 5-foot cedar tree.....	1, 023. 13
T. 31 N., R. 11 E., about 1,500 feet from corner of secs. 29, 30, 31, and 32, left bank of Sauk River, 20 feet northeast of pool at foot of fall on Falls Creek 150 feet above its mouth, in ledge; copper bolt stamped "1039".	1, 040. 488
Snover cabin, about 660 feet north of, east side of road, on 30-inch hemlock tree.....	980. 81
McClellan ranch, 2,400 feet northwest of, 10 feet west of road, on 5-foot cedar tree.....	940. 9
T. 31 N., R. 10 E., between secs. 14 and 15, 100 yards northwest of Duber cabin, about 220 feet southeast of meander corner on west bank of Sauk River, 10 feet west of road, in blue ledge; copper bolt stamped "838" ..	839. 982
Bordens Creek, 50 feet north of, west side of road, on 15-inch hemlock tree.	815. 42

From Monte Cristo Lake southeast along highway to Goat Lake.

Elliott Creek, bed of, at road crossing.....	1, 797
Goat Lake, 61 feet north of Coffin log house, 12 feet northeast of Goat Lake road, about 60 feet northeast of Elliott Creek, in rock in place; copper bolt stamped "3162" ..	3, 165. 579
Goat Lake, surface of water.....	3, 155. 6

From Marblemount east along highway to Cascade Pass.¹

Mineral Park 150 feet north of east end of bridge over North Fork, 30 feet east of trail, 50 feet northeast of dugout root house, in granite rock in bank 3.5 feet high, projecting 3 feet from earth; copper bolt stamped "1396 T. U. L." ..	1, 394. 978
Mineral Park, 2.5 miles northeast of, north bank of North Fork, 50 feet from old bridge, north of trail, in hemlock tree; nail.....	2, 038. 07
Gilbert cabin, 2.5 miles east of, 100 feet east of rock slide, north of trail; marked cross on sharp point at lower end of granite rock on grassy slope.	4, 947. 91
Cascade summit; iron post stamped "5423." (This post was set in 1897 and the elevation as stamped was based upon an assumed datum at Chelan Falls on Columbia River).....	5, 390. 457

HICKSVILLE QUADRANGLE.

[Latitude 47°-47° 15'; longitude 119°-119° 15'.]

From Lind west along road and trail to Moses Lake (part of line).

Primary leveling in 1903 by R. B. Shaw.

T. 18 N., R. 30 E., 800 feet south of corner of sec. 34, 20 feet south of old McMoman trail, edge of Jake Bowers's field; iron post stamped "1144 T" ..	1, 143. 466
T. 18 N., R. 30 E., probably 750 feet east of west quarter corner of sec. 21, 27.1 miles west of Lind, 75 feet west of old trail; iron post stamped "1153 T" ..	1, 152. 683
T. 18 N., R. 29 E., SW. $\frac{1}{4}$ sec. 13, 8 feet north of old McMoman trail, on summit of very small ridge running north and south, 30 miles west of Lind; iron post stamped "1157 T" ..	1, 156. 806
Lind, 33 miles west of, 20 feet west of road, 100 feet north of forks in road, 600 feet east of north from small shanty; iron post stamped "1225 T" ..	1, 224. 712

¹ This line closes 3 feet low and is unadjusted.

) (' ! " (# i

From Curlew west along Kettle River road to Midway, B. C. (spur line; elevations unreliable).

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Up Goosmus Creek 2 miles to Louie ranch (spur line; elevations unreliable).

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From Curlew west along Kettle River road to Midway, B. C. (spur line; elevations unreliable).

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From Lynch ranch via Toroda Creek to Van Brunt ranch.

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From point near Republic east along highway to milepost 1.

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From mouth of Beaver Creek northwest along road to Chesaw (part of line).

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RIPARIA QUADRANGLE.

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From Starbuck east along Oregon-Washington R. R. & Navigation Co. track C miles.
(Unadjusted line.)

) 6 , - , . 0 . 1915 by D. S. 8
75 8 457, 31 + , & 1 1 & / / . , . , 61 . . . 2 +
/ . / 75 , & . 0 . 41 1 64 & I 9 ; ' 1 + ; J 99 #

Starbuck, 1 mile east of, milepost 1, Pomeroy branch of Oregon-Washington R. R. & Navigation Co., east side of track, spike scribed "U. S. 681 B. M."	681. 02
Milepost 2, 350 feet east of, telegraph pole, north side of track, spike scribed "U. S. 707 B. M."	707. 05
Starbuck, 2.07 miles east of, 1,050 feet east of milepost 3, 25 feet south of forks of Pomeroy-Dayton roads, 125 feet east of railroad crossing, 50 feet south of Oregon-Washington R. R. & Navigation Co. track, south side of road, iron post stamped "738 Wash. 1915" P. B. M. No. 34	737. 269
Milepost 4, back side of, south side of track, spike scribed "U. S. 768 B. M." bench mark	767. 37
Starbuck, 3.98 miles east of, 250 feet east of mile post 5, north side of Oregon-Washington R. R. & Navigation Co. track, top of concrete culvert bronze tablet stamped "804 Wash. 1915" P. B. M. No. 35	804. 261
Milepost 6, north side of track, spike scribed "U. S. 839 B. M."	838. 82

RITZVILLE QUADRANGLE.

[Latitude 47°-47° 30'; longitude 118°-118° 30'.]

From Concord southwest along Northern Pacific Ry.

Precise leveling by the U. S. Coast and Geodetic Survey.

Concord, 40 meters northeast of station, 25 meters north of track; U. S. G. S. iron post stamped "1,897" (U. S. C. & G. S. b. m. U ₄)	1, 896. 633
Concord, 0.25 mile west of milepole 132, 25 meters north of track, 3 meters west of telegraph pole: iron post (U. S. C. & G. S. b. m. V ₄)	1, 900. 360
Keystone, 1.25 miles east of station, 25 meters north of track; iron post (U. S. C. & G. S. b. m. W ₄)	1, 901. 653
Keystone, 30 meters north of station; U. S. G. S. iron post stamped "1,937" (U. S. C. & G. S. b. m. X ₄)	1, 936. 263
Keystone, 1.75 miles west of station, 35 meters north of track, at highway crossing: iron post (U. S. C. & G. S. b. m. Y ₄)	1, 926. 889
Tokio, 1 mile east of station, 50 meters west of milepole 140, 20 meters northwest of track, 3 meters southeast of highway; iron post (U. S. C. & G. S. b. m. Z ₄)	1, 936. 653
Tokio, 50 meters west of milepole 142, 0.5 mile west of station; U. S. G. S. iron post stamped "1,944" (U. S. C. & G. S. b. m. A ₅)	1, 943. 146
Tokio, 2 miles west of station, 15 meters south of track, 1 meter west of fence at highway crossing; iron post (U. S. C. & G. S. b. m. B ₅)	1, 896. 669
Coker, 0.25 mile east of east end of siding, 35 meters northwest of milepole 146, 1 meter west of telegraph pole; U. S. G. S. iron post stamped "1848" (U. S. C. & G. S. b. m. C ₅)	1, 848. 431
Ritzville, 1.25 miles east of station, 25 meters west of mile pole 148, 15 meters northwest of track; iron post (U. S. C. & G. S. b. m. D ₅)	1, 831. 686

From Paha northeast along Northern Pacific Ry. to Sprague (double line).

Double line by H. S. Crowe in 1898, in part redetermined by U. S. Coast and Geodetic Survey precise leveling.

Milepost "Wallula 90, Hope 156," opposite; iron post stamped "1645 T" (=U. S. C. & G. S. b. m. F ₅)	1, 644. 944
Ritzville, 1.1 miles south of, 4 feet north of telegraph pole, 150 feet south-east of milepost "Wallula 95, Hope 151," 42 feet east of center track; iron post stamped "1798 T" (=U. S. C. & G. S. b. m. G ₅)	1, 797. 342

Ritzville, at north entrance to Adams County courthouse, in fifth row of bricks above stone foundation; aluminum tablet stamped "1820 T".....	Feet. 1, 819. 887
Harriston siding, at west end of; head of block of switch.....	1, 927. 4
Harriston, in front of section house; top of rail.....	1, 936. 4
Sprague Lake; water surface.....	1, 879

ROCK LAKE QUADRANGLE.

[Latitude 47°-47° 30'; longitude 117° 30'-118°.

From Cheney southwest along Northern Pacific Ry. to Sprague.

Precise leveling by the U. S. Coast and Geodetic Survey.

Cheney, in corner of national bank building; U. S. G. S. tablet stamped "2,351" (U. S. C. & G. S. b. m. I ₄).....	2, 350. 149
Cheney, 2.5 miles west of station, 120 meters southeast of milepole 104, 25 meters south of track; U. S. G. S. iron post stamped "2,353" (U. S. C. & G. S. b. m. J ₄).....	2, 351. 291
Babb siding, 50 meters northwest of west end of siding, 35 meters north of crossing, 20 meters north of track; iron post (U. S. C. & G. S. b. m. K ₄)..	2, 331. 596
Tyler, 3 miles east of station, 20 meters north of milepole 109; U. S. G. S. iron post stamped "2,284" (U. S. C. & G. S. b. m. L ₄).....	2, 282. 509
Tyler, 0.5 mile north of, 20 meters west of track at highway crossing; iron post (U. S. C. & G. S. b. m. M ₄).....	2, 282. 535
Tyler, 2 miles south of, 15 meters northwest of milepole 114, 15 meters west of track; U. S. G. S. iron post stamped "2,272" (U. S. C. & G. S. b. m. N ₄)..	2, 270. 369
Fish Trap, 400 meters west of station, 35 meters west of highway crossing, 15 meters north of track; iron post (U. S. C. & G. S. b. m. O ₄).....	2, 272. 840
Fish Trap, 3 miles west of station, 20 meters northwest of milepole 119, 5 meters east of telegraph pole; U. S. G. S. iron post stamped "2,147" (U. S. C. & G. S. b. m. P ₄).....	2, 146. 334
Kline, 0.75 mile west of station, 0.25 mile east of milepole 122, 30 meters southeast of track, 1 meter west of fence; iron post (U. S. C. & G. S. b. m. Q ₄).....	2, 081. 538
Sprague, in concrete head wall of culvert, 300 meters west of milepole 123, 2 miles east of Sprague; disk (U. S. C. & G. S. b. m. R ₄).....	2, 045. 652
Sprague, 0.5 mile northeast of station, 15 meters west of highway crossing; U. S. G. S. iron post stamped "1,936 T" (U. S. C. & G. S. b. m. S ₄)....	1, 935. 911
Sprague, 1.75 miles west of station, 25 meters north of track; iron post (U. S. C. & G. S. b. m. T ₄).....	1, 891. 610
Sprague, northeast corner of First and C streets, in brick wall of Grey's store, ninth tier of bricks above sidewalk; aluminum tablet stamped "1899 T".....	1, 898. 265
Sprague, in front of station; top of rail.....	1, 898. 1

From Sprague northeast along Northern Pacific Ry. to Cheney (double line).

Double line by H. S. Crowe in 1898. Redetermined by U. S. Coast and Geodetic Survey precise leveling.

Kline, in front of section house; top of rail.....	2, 111. 7
Tyler, in front of telegraph office; top of rail.....	2, 289. 8
Cheney, in front of station; top of rail.....	2, 333. 5
Cheney, on right-hand side of portico entrance to Washington State Normal School, in eighth tier of brick above tile floor and 16 feet east of corner of wall; aluminum tablet stamped "2432 T".....	2, 430. 352

SAMISH LAKE QUADRANGLE.

[Latitude 48° 30'–48° 45'; longitude 122° 15'–122° 30'.]

From Woodlawn southeast along Northern Pacific Ry. to Wickersham.

Primary leveling in 1905 by G. C. Jacobs.

Sunnyside, 150 feet west of milepost 9, 30 feet east of station, 10 feet south of track, in top of granite rock; aluminum tablet stamped "312 B".....	Feet. 312. 524
Blue Canyon, 800 feet east of coal company's bumper, 30 feet south of track, 1,200 feet east of milepost 5, in 6 by 6 by 3 foot sandstone rock; aluminum tablet stamped "318 B".....	318. 177

From Fairhaven along Great Northern Ry. to Belleville.

Chuckanut Creek, 0.25 mile west of, south of track, 275 feet west of bridge over slough, 500 feet west of Neff green house; iron post stamped "186 B".....	186. 590
A. C. Milne house, 2.3 miles northwest of, 625 feet east of road to American lumber and shingle mill, 1,610 feet east of bridge over Chuckanut Creek, south of road; iron post stamped "554 B".....	554. 789
A. C. Milne house, 1.1 miles southeast of, southwest of Lake Samish, 1,450 feet east of Manly shingle mill, 10 feet east of bridge over small stream; iron post stamped "343 B".....	343. 591
Alger, 725 feet east of track, 260 feet south of Clear Creek bridge, 50 feet north of road forks; iron post stamped "270 B".....	270. 262
Belfast, 1.8 miles north of, 28 feet east of track, 24 feet west of Friday Creek, 120 feet south of section tool house; iron post stamped "123 B".....	124. 016
Moody, 90 feet west of store, 45 feet west of track, 340 feet south of trestle 5 over Samish River; iron post stamped "53 B".....	53. 578
Belleville, 75 feet north of track, west of main street, 125 feet west of station; iron post stamped "29 B".....	30. 058

From Fairhaven along Great Northern Ry. to Belleville.

Chuckanut switch, 2,750 feet south of Chuckanut salmon cannery, 135 feet south of watchman's cabin, 540 feet north of station, west of track; iron post stamped "44 B".....	44. 273
Samish, 2.6 miles north of, 300 feet north of milepost 86, 60 feet north of emergency rail stand, 15 feet east of track, in top of flat sandstone rock; aluminum tablet stamped "38 B".....	39. 025
Samish switch, 18 feet east of, east of track, 930 feet south of trestle 18, 60 feet south of house; iron post stamped "10 B".....	10. 467
Bow, west of track, opposite station, 420 feet north of road crossing; iron post stamped "14 B".....	14. 613
Bow, 2.2 miles south of, west of track, 250 feet west of E. Shumway's gate, in southwest angle of road crossing; iron post stamped "19 B".....	19. 668

From Belleville northeast along highway to Prairie.

Moody's abandoned logging camp, 1 mile northeast of, Samish River bridge, in line of fence north of road opposite old blacksmith shop; iron post stamped "142 B".....	142. 347
Prairie schoolhouse, 0.25 mile south of, northeast angle of crossroads, north of fence corner, 1,500 feet east of Samish River bridge, 2 feet north of fence corner; iron post stamped "205 B".....	205. 569

ST. HELENS QUADRANGLE. (INCLUDING PORTLAND 15-MINUTE QUADRANGLE.)

[Latitude 45° 30' -46°; longitude 122° 30' -123°.

From Vancouver north along Northern Pacific Ry. to Kalama. (Leveled twice by L. F. Biggs, 1914-15.)

	Feet.
Vancouver, in county courthouse, east side of main entrance, in back of column; bronze tablet stamped "73" (see Bull. 557, p. 132).....	75.009
Vancouver, in front of station, top of east rail of west track.....	47.95
Vancouver, at north end of railroad bridge, top of east side of abutment; bronze tablet stamped "49 1915".....	47.301
Vancouver, 1.7 miles north of, at semaphore 132.3, on concrete wall; chiseled cross and "U. S. 45".....	43.055
Vancouver junction, 400 feet north of west side of track, west end of concrete railroad culvert; bronze tablet stamped "21 B. 15 1914".....	20.237
Vancouver, 4 miles north of, at semaphore 129.1, on concrete wall; chiseled cross and "U. S. 43".....	41.819
Felida, on concrete base of danger signal wall; chiseled cross "U. S. 43".....	42.327
Ridgefield, 7.6 miles south of, Felida 1 mile north of, semaphore 127.3; chiseled cross on southeast corner "U. S. + 44".....	42.378
Ridgefield, 6.6 miles south of, in west end of south abutment of bridge over Salmon Creek; bronze tablet stamped "1914 41 B 14".....	40.010
Ridgefield, 5.9 miles south of, in northeast corner of base of semaphore 125.5; chiseled "U. S. + 43".....	41.905
Ridgefield, 5.1 miles south of, 500 feet north of Knapps station, on west side of track; bronze tablet in culvert, stamped "1914 20 B. 13".....	18.740
Ridgefield, 3.7 miles south of, east side of track, on northeast corner of culvert; signal base chiseled "U. S. + 42".....	40.883
Ridgefield, 2.6 miles south of, on southwest corner of base of semaphore 122.2; chiseled "U. S. + 43".....	41.674
Ridgefield, 1.1 miles south of, on northeast corner of concrete base of semaphore 120.7; chiseled "U. S. + 42".....	40.661
Ridgefield water tank, on west side of track, 200 feet north of station, in concrete foundation; bronze tablet stamped "1914 40 B. 12".....	39.342
Ridgefield, 0.5 mile north of, in northeast corner of concrete base of semaphore 119.1; chiseled "U. S. + 42".....	40.743
Ridgefield, 1.7 miles north of, in northeast corner of concrete base of semaphore 117.9; chiseled "U. S. + 41".....	39.957
Woodland, 2.4 miles south of, at north end of drawbridge over Lewis River, in concrete abutment; bronze tablet stamped "35 1914 B. 11"....	33.881
Woodland, 1 mile south of, on east side of track on northwest corner of concrete base of signal; chiseled "U. S. + 34".....	32.927
Woodland, on west side of Davidson Avenue between Third and Second streets, in concrete stop landing to P. A. Blues' store; bronze tablet stamped "29 1914 10 B".....	27.938
Woodland, 0.5 mile north of, in northwest corner of concrete base of semaphore 113.6; chiseled cross marked "U. S. 33".....	32.393
Woodland, 1.9 miles north of, on west side of track, 260 feet north of semaphore 112.4, in concrete culvert; bronze tablet stamped "19 1914 B 9".....	17.752
Woodland, 2.7 miles north of, in northeast corner of concrete base of semaphore 111.9; chiseled cross marked "U. S. 38".....	37.182
Kalama, 5.2 miles south of, in southeast corner of concrete base of semaphore 110.3; chiseled cross marked "U. S. 38".....	36.699
Kalama, 4.1 miles south of, 1,300 feet north of Martins Bluff station in northeast corner of under track railroad crossing to powder house; bronze tablet stamped "34 1914 B 8".....	32.859

Kalama, 3.4 miles south of, in southeast corner of base of semaphore 108.5; chiseled cross marked "U. S. 36"	Feet. 35.382
Kalama, 2.1 miles south of, in northeast corner of base of semaphore 107.1; chiseled cross marked "U. S. 37"	35.646
Kalama, 1.2 miles south of, on west side of track, on northeast corner of base of signal; chiseled cross marked "U. S. 30"	28.629

From Woodland northeast along highway to Ariel.

Leveled by L. F. Biggs in 1915.

Woodland, 1.1 miles northeast of, 800 feet southwest of Cangas Road and Pacific Highway junction, in root of 30-inch maple tree; copper nail scribed "U. S. 31"	30.861
Woodland, 2.3 miles northeast of, 300 feet north of private road east, on west side of road, in root of 20-inch fir tree; copper nail scribed "U. S. 34"	33.639
Woodland, 3.4 miles northeast of, on north edge of road, 250 feet east of cottage, in root of 24-inch fir tree; copper nail scribed "U. S. 40"	39.384
Woodland, 3.6 miles east of, 0.2 mile west of T road, 120 feet north of bridge, on north side of road, in rock; bronze tablet stamped "29 1 1915"	28.562
Woodland, 4.8 miles east of, on north edge of road, 70 feet south of church site, in root of 30-inch maple tree; copper nail scribed "U. S. 56"	55.553
Reno, 2.8 miles west of, on north edge of road, in front of schoolhouse, in root of 18-inch fir tree; copper nail scribed "U. S. 60"	59.501
Reno, 2 miles west of, on east edge of road in yard on Geo. C. Dufur's ranch, in west wall of root cellar; bronze tablet stamped "75 2 1915"	74.443
Reno, 0.9 mile west of, on north side of road, 25 feet north of fence, in root of forked box elder tree; copper nail scribed "U. S. 165"	164.827
Reno, 200 feet east of ferry, on south edge of road, in root of 36-inch fir tree; copper nail scribed "U. S. 63"	63.186
Reno, 1.5 miles east of, on north edge of road, 100 feet west of bridge, in root of 16-inch alder tree; copper nail scribed "U. S. 178"	177.695
Reno, 1.8 miles east of, on north edge of road at turn, in boulder; bronze tablet stamped "257 3 1915"	257.110
Reno, 2.6 miles east of, on north edge of road, 70 feet west of bridge over canyon, on boulder; chiseled circle marked "U. S. 316"	316.336
Ariel, 3.5 miles southwest of, on west wedge of road, 30 feet north of small spring, in face of rock; bronze tablet stamped "263 4 1915"	263.159
Ariel, 2.4 miles southwest of, on west edge of road, at south end of wooden bridge over creek; chiseled circle on rock marked "U. S. 126"	125.889
Ariel, 1.2 miles southwest of, on north edge of road, on south bank of ravine, in root of 38-inch maple tree; copper nail scribed "U. S. 141"	141.280

SEATTLE QUADRANGLE.

[Latitude 47° 30'–47° 45'; longitude 122° 15'–122° 30'.

From Seattle along highways and Northern Pacific Ry. to Black River.

Precise leveling by the U. S. Coast and Geodetic Survey.

Seattle, 1.368 meters south of Madison Street, 0.2 meter from edge of sill on Post Street, on northern end of doorsill on west side of Rainier Grand Building on Post Street; square cut (Tidal 4 equals City, C. & G. S.)	19.862
Seattle, on rear of the old Seattle Athletic Club building, now the Seneca Hotel, on Post Street, 2.402 meters north of Seneca Street, 0.681 meter above lower edge of window sill; top surface of an iron hinge (C. & G. S. "Tidal 5")	21.536

Seattle, at intersection of First Avenue, James Street, and Yesler Way, in Pioneer Park, 5.350 meters from east fence of park, 5.430 meters from west fence, 4.070 meters south of totem pole; square hole in top of granite post marked "U. S. B. M." (C. & G. S. "G").....	Feet. 25. 111
Seattle, corner of James Street and First Avenue, at entrance of Puget Sound National Bank, 0.20 meter from edge of step and 0.30 meter from granite base supporting the column at side of doorway, the face of which is inscribed "City Datum"; square outlined in granite step (C. & G. S. "City 1").....	24. 836
Seattle, on foundation for chimney of Rainier Heat, Light & Power Co.'s generating plant, 76 meters southeast of Hill's gas works and 5 meters from siding of Columbia & Puget Sound R. R., on west side of foundation; cross cut in upper surface of top stone, 0.03 meter from west edge of stone (C. & G. S. "City 2").....	10. 945
South Seattle, 23 meters west of intersection of Charlestown Street and Eighth Avenue South and about 11 meters north of C. M. Felt's fence; tack in root of maple tree (C. & G. S. "City 3").....	10. 299
Argo, 0.9 kilometer south of, 65 meters south of south cattle guard for first railroad crossing south of Argo, 11.55 meters from east right of way fence, 3.055 meters from center of nearest Columbia & Puget Sound rail, 1.53 meters from center of nearest Northern Pacific Ry. rail; shallow circular depression in center of cylindrical concrete post set flush with surface of gravel between tracks and marked "N. P." on top (C. & G. S. "N P")..	20. 164
Black River, 4 kilometers north of, near old spur known as Van Asselts, 14 meters south of crossing for logging teams, 1.52 meters from center of nearest Northern Pacific Ry. rail, 1.66 meters from nearest Columbia & Puget Sound rail; shallow circular depression in center of cylindrical concrete post set flush with surface of gravel between the tracks and marked "N. P." on top (C. & G. S. "N. P").....	21. 404

SKYKOMISH QUADRANGLE.

[Latitude 47° 30'-48°; longitude 121°-121° 30'.]

From Cle Elum along highway north to Fish Lake (part of spur line; elevations unreliable).

Primary leveling in 1897 by G. N. Pratt and in 1898 by H. K. Kалlock.

Fish Lake, at foot of; water level June 25, 1898.....	3, 325. 4
Fish Lake, in open meadow east of, 90 feet east of road, 105 feet north of small double log cabin, 125 feet west of edge of timber, in granite boulder 6 by 7 by 9 feet; aluminum tablet stamped "3371 T".....	3, 372. 708
Fish Lake, near head of; water level June 27, 1989.....	3, 326. 4
From Peshastin along Great Northern Ry. west to Index (part o. spur line; elevations unreliable).	
Cascade tunnel, 12.5 feet west of main track, 120 feet north of water tank, 780 feet north of main switch, 90 feet southwest of tool house; iron post stamped "3373 T".....	3, 373. 835
Cascade summit, 225 feet south of section house at, 13 feet west of main track in curve, 345 feet south of north switch of side track; iron post stamped "4061 T".....	4, 061. 486
Wellington, 16 feet north of new station, 15 feet south of section house, 20 feet east of main track; iron post stamped "3114 T".....	3, 114. 779
Madison, 75 feet southeast of roundhouse, 45 feet east of dwelling house, 16 feet south of main track, 260 feet west of east end of side track, 15 feet east of 26-inch stump: iron post stamped "2106 T".....	2, 106. 488

Madison, 7 miles from, 5 miles from Skykomish, 9 feet east of track, in south end of small gravel pit, 600 feet south of signboard "Bridge 418 1 mile,"	Feet.
420 feet north of milepost 1734, iron post stamped "1389 T".....	1, 389. 706
Skykomish, 80 feet west of station, 20 feet east of water tank, 15 feet south of main track; iron post stamped "930 T".....	930. 116
Salmon, 12 feet north of track, 130 feet east of switch at west end of side-track; iron post stamped "759 T"	759. 716

From Index northeast along highway to Mineral City (part of spur line; elevation unreliable).

Galena, 6 feet southwest of corner of Silver Creek store, 12 feet east of road; iron post stamped "1110 T".....	1, 110. 747
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From Monte Cristo northwest along Everett & Monte Cristo (Northern Pacific) Ry. to point near Silverton.

Monte Cristo station, 247 feet north of freight platform, 20 feet east of switch-back, in large rock north of Everett & Monte Cristo Ry. trestle; copper bolt stamped "2772".....	2, 774. 073
Bridge 51, 210 feet east of, 20 feet north of center of track, on 30-inch hemlock stump.....	2, 510. 154

SLATE PASS QUADRANGLE.

[Latitude 48° 30'–49°; longitude 120° 30'–121°.

From Panther Creek east along trail to Slate Creek Pass.

Primary leveling in 1899, 1900, 1901 by E. M. Fry, in 1904 by Thomas Riggs, and in 1905 by George Newman.

Canyon Creek, 300 feet east of bridge over, 0.5 mile from mouth of, on north side and 30 feet from creek, 400 feet north of house of Old Channel Hydraulic Co., in rock bluff; aluminum tablet stamped.....	1, 899. 720
Mill Creek, mouth of, 200 feet northwest of cabin near, 250 feet north of Canyon Creek, in rock wall near old placer diggings; aluminum tablet.....	2, 440. 520
Slate Creek, 500 feet north of mouth of, 100 feet east of Smoky Cabin, 100 feet east of trail, in large boulder; aluminum tablet.....	2, 838. 759
Slate Creek camp, 1.5 miles southeast of, junction of Slate Creek and Benson Creek trail; top of boulder, marked "4877".....	4, 805. 41
Slate Creek Pass, at summit between Trout and Slate creeks, in large stone 10 feet south of trail; aluminum bolt stamped "6197".....	6, 197. 563

From Slate Creek or Harts Pass southwest along trail to Barron, thence to Windy Pass and return to Harts Pass.

Harts Pass (Slate Creek Pass), on trail at summit between Trout and Slate creeks, in top of boulder; aluminum bolt stamped "6197".....	6, 197. 563
Harts Pass, 0.7 mile southwest of, at creek crossing road, in root of twin trees; spike.....	5, 789. 999
Harts Pass, 1.3 miles southwest of, about 2 miles south of Barron, at creek crossing road; point on rock.....	5, 120. 30
Harts Pass, 1.7 miles southwest of, on north bank of road, in root of spruce tree; spike.....	5, 073. 03
Barron, 75 feet from, 2 miles southwest of Harts Pass, on north edge at junction of Barron and Slate Creek roads; point on conical rock.....	4, 806. 04
Barron, 6 feet west of road, 3 feet west of post office, in store of Methow Trading Co. (now Simon Veasy), 150 feet east of Skagit River Hotel; iron post stamped "5353 Tul".....	5, 353. 126
Barron, 0.5 mile north of, 50 feet west of road, in west side of tamarack stump; nail.....	5, 843. 98

	Feet.
Barron, 3.9 miles north of, west side of road, in balsam stump; nail head..	5, 994. 88
Barron, 1.5 miles north of, 100 feet north of Sky trail, 300 feet east of Barron trail, in Windy Pass, in lowest part on saddle on divide between Pasayton River and north fork of Slate Creek, in top of largest boulder; bronze tablet stamped "6262 Tul".....	6, 262. 250
Harts Pass, 4.5 miles northwest of, in middle of pass between a fork of Slate Creek and Pasayton River, on small knoll, 100 feet north of trail; iron post stamped "6575 Tul".....	6, 575. 487
Harts Pass, 4 miles northwest of, 3 feet to left of trail, in pass between Pasayton River and fork of Slate Creek, in root of small tamarack tree; nail.....	6, 703. 28
Harts Pass, 2.8 miles northwest of, 4 feet below trail: painted rock.....	6, 987. 69
Harts Pass, 1.5 miles northwest of, near top of bench coming up from valley, on boulder.....	6, 770. 97
Harts Pass, 0.5 mile northwest of, on high trail from pass, on boulder....	6, 411. 62
From Windy Pass northeast along trail to Pasayton River, thence north down river to international boundary line.	
Windy Pass, 0.6 mile northeast of, 4 feet from trail, in root of leaning spruce tree; head of spike.....	5, 780. 35
Windy Pass, 1.3 miles northeast of, 20 feet from creek, in root of spruce tree; 20-penny spike.....	5, 388. 22
Windy Pass, 2.1 miles northeast of, 50 feet from trail, up east fork of Pasay- ton River, in large spruce tree; spike.....	5, 097. 48
Windy Pass, 3.6 miles northeast of, west bank of river below small flat on west side and above slide on west side of river; in large rock; aluminum tablet stamped "4928 Tul".....	4, 928. 236
La Roche cabin, 2.8 miles south of, west bank of river, 75 feet north of first tributary on west, in root of balsam tree; spike.....	4, 904. 49
La Roche cabin, 0.8 mile south of, in root of spruce tree; spike.....	4, 788. 51
La Roche cabin, 70 feet from, at forks of new and old trails, 10 feet from both trails: iron post stamped "4767 Tul".....	4, 766. 977
La Roche cabin, 0.5 mile north of 20 feet west of trail, east side of river; corner of large boulder.....	4, 706. 21
La Roche cabin, 1.3 miles north of, west side of river; point on boulder..	4, 647. 55
Pasayton River, on west bank of river just above falls, 70 feet west of trail to Barron, in rock; aluminum tablet stamped "4632 Tul".....	4, 631. 568
La Roche cabin, 2.25 miles north of: ring of paint around point of rock..	4, 554. 00
La Roche cabin, 3 miles north of, 20 feet from west bank of river, in root of balsam tree; spike.....	4, 506. 60
La Roche cabin, 4 miles north of, east bank of river below a gooseneck of same, in root of spruce tree; spike.....	4, 454. 99
La Roche cabin, 4.5 miles north of, 100 feet south of where trail crosses river, on east bank. iron post stamped "4443 Tul".....	4, 443. 453
La Roche cabin, 5.3 miles north of, west side of river, 11 miles south of international boundary; ring of paint around rock.....	4, 373. 65
International boundary, 8.6 miles south of, west side of river. 5 feet just around bend to south of, Robinson's upper cabin, in root of dry pine; spike.....	4, 204. 331
International boundary, 8.2 miles south of, west bank of river, in knuckle of balsam tree; spike.....	4, 178. 74
International boundary, 6.7 miles south of, 50 feet east of river, point on large boulder.....	4, 092. 74

International boundary, 5.9 miles south of, 150 feet south of small creek, west side of river 50 feet distant and 12 feet higher; iron post stamped "4052 Tul".....	Feet. 4,051.786
International boundary, 3.5 miles south of, east side of river, on gravel bar: point on large boulder.....	3,998.20
International boundary, 2.1 miles south of, west bank of river, in root of balsam tree; spike.....	3,943.78
International boundary, 1.5 miles south of, in forks of Barron and Boundary trail, in base of pine tree; spike.....	3,963.69
International boundary, 1 mile south of, west side of trail, in root of spruce tree; spike.....	3,912.87
International boundary, 0.5 mile south of, west side of trail, in root of pole pine stump; nail.....	3,879.93
Vista on international boundary, 10 feet east of trail, in root of tree; head of nail.....	3,851.95
International boundary, 300 feet east of Pasayton River, 10 feet east of trail; iron post stamped "3853 Tul".....	3,852.854

From Winthrop northwest along highway and trail to Slate Creek Pass (part of line).

Robinson Creek, 3 miles south of, 400 feet north of milepost 3, in root of 12-inch pine tree; nail.....	2,374.56
Robinson Creek, 2 miles south of, 5 feet west of milepost 2; top of stone.....	2,427.37
Robinson Creek, 4 feet east of southeast corner of Methow Trading Co.'s warehouse, in stone; aluminum bolt stamped "2521 T".....	2,521.528
Robinson Creek, 2.5 miles north of, north side of trail; on top of stone.....	2,713.47

SNOHOMISH QUADRANGLE.

[Latitude 47° 30'–48°; longitude 122°–122° 30'.

From Grand Ridge coal mine along Northern Pacific Ry. to Issaquah, thence southwest along wagon road to point about 5 miles southwest of Issaquah.

Primary leveling in 1910 by D. S. Birkett.

Issaquah, 360 feet south of Northern Pacific Ry. station, 45 feet east of railroad, north side of Mill Street, 5 feet west of southeast corner of feed stable; iron post stamped "07 Wash".....	96.522
Issaquah, in front of Northern Pacific Ry. station; top of rail.....	96.9
Issaquah, 1.5 miles northwest of, Renton-Snoqualmie road, 0.9 mile west of Northern Pacific Ry., north side of road, 200 feet west of schoolhouse, at base of cedar stump 6 feet in diameter and 8 feet high; copper nail in notch, aluminum tag stamped "76".....	74.26
Superior Mines, 3.8 miles southwest of Issaquah, west side of road, 10 feet north of northeast corner of mining company barn; iron post stamped "366".....	365.377
Issaquah, 4.9 miles southwest of, 0.5 mile south of shingle mill, 10 feet west of road, at base of 1½-foot cedar stump 2 feet high; copper nail in notch, aluminum tag stamped "387".....	386.89

SNOQUALMIE QUADRANGLE.

[Latitude 47°–47° 30'; longitude 121°–121° 30'.

From Lester along Northern Pacific Ry. to Nelson.

Precise leveling by the U. S. Coast and Geodetic Survey.

Weston, 1.5 kilometers east of, in vertical face of side rock cut, 16 meters west of milepole 183, 2.45 meters north of nearest rail, 0.7 meter above level of top of rail; red metal disk (C. & G. S. "C ₁ ").....	1,974.747
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106923°—Bull. 674—18—10

Borup, 2.2 kilometers west of, on right of way, 31 meters east of west end of third rock cut east of milepole 182, 1.95 meters south of nearest rail; copper bolt marked "B. M." set vertically in natural rock (C. & G. S. "D ₁ ").	Feet. 2, 155. 448
Stampede, 370 meters east of, at south side of west entrance to Stampede tunnel, in vertical surface of rock, 3 meters south of nearest rail, 1 meter above level of rails at that point; red metal disk (C. & G. S. "E ₁ ").	2, 810. 270
Stampede, 1.7 kilometers east of, on north side of track in Stampede tunnel, near halfway point and at head of grade in tunnel, in vertical brick wall forming west side of manhole, 2.15 meters north of nearest rail, 1.55 meters above floor, 0.45 meter north of side of tunnel; red metal disk (C. & G. S. "F ₁ ").	2, 849. 489
Easton, 4.5 kilometers west of, at south end of west concrete abutment of bridge 161 over Cabin Creek, 195 meters east of milepole 168 Pascal, 0.35 meter from east and 0.18 meter from south edge, 1.67 meters south of nearest rail; copper bolt in upper surface marked "B. M." (C. & G. S. "G ₁ ").	2, 238. 850
Easton, in front and 5.5 meters south of A. O. Johnson's house, 2.35 meters east of Johnson Bros.' store, 2.2 meters north of fence inclosing yard; bottom of square hole in top of stone post marked "U. S. □ B. M." (C. & G. S. "H ₁ ").	2, 166. 784
Easton, in northeast corner of yard surrounding A. J. Adams's residence, 14 meters north of house, 0.74 meter from north fence, 0.62 meter west of east fence inclosing yard, 100 meters south of main track; red metal cap on iron post (C. & G. S. "I ₁ ").	2, 169. 130
Nelson, 1.8 kilometers west of, on west concrete abutment of bridge 151, in top surface, 0.35 meter from west edge and 0.18 meter from south edge of abutment, 1.67 meters south of nearest rail; copper bolt marked "U. S. □ B. M." (C. & G. S. "J ₁ ").	2, 074. 176

From Hot Springs east along Northern Pacific Ry. to Cle Elum.

Primary leveling in 1897 by H. K. Kalloch.

Lester, in top of concrete pedestal at southwest corner of Northern Pacific coal dock, on southwest corner of pedestal; cross cut (established by Northern Pacific Ry. Co. 1913).	1, 614. 69
Lester, on south window in east side of boiler house operating fuel-oil supply; check bench mark established by Northern Pacific Ry. Co. 1913.	1, 619. 39
Lester, in front of station; top of rail.	1, 610. 7
Stampede, 75 feet southwest of station, 10 feet northwest of bluff on Deer Creek; iron post stamped "2776 T" ¹ .	2, 777. 350
Stampede tunnel, at east end of; top of south rail at east end of snow shed.	2, 834. 2
Martin, 40 feet east of station and 20 feet south of main track, 6 feet east of telegraph pole, on bank above track; iron post stamped "2782" ¹ .	2, 784. 050
Martin, in front of station; top of south rail.	2, 776. 7
Snoqualmie wagon road, 3.6 miles west of Easton, at intersection with Northern Pacific Ry., 12 feet north of track, 15 feet east of wagon road; iron post stamped "2304".	2, 305. 848
Easton, 90 feet northwest of northwest corner of station, 110 feet north of track at water tank, 80 feet south of general store and post office; iron post stamped "2166".	2, 167. 671

¹ Bench mark found loose in 1904; reset in concrete.

Big Creek, 25 feet north of west pillar of signpost at siding, 35 feet north of main track, 150 feet east of trestle 56 over small creek; iron post stamped "2103" Feet.
2, 104. 790

Nelson, 205 feet south of track, 200 feet northeast of house of Peter Nelson, 410 feet southwest by west from signboard "Nelson," 3 feet east of fence corner and 12 feet west of large pine tree; iron post stamped "2030" 2, 031. 554

From Cle Elum north along highway to Fish Lake (part of spur line; elevations unreliable.)

Primary leveling in 1897 by Frank Cole, in 1898 by H. K. Kalloch, in 1900 by C. J. Hutchison, and in 1910 by D. S. Birkett.

Ronald, south side of sec. 7, T. 20 N., R. 15 E., northeast side of main street, at southeast corner of old Northern Pacific Coal Co.'s boarding house, 500 feet south of track; iron post stamped "2345 T" 2, 346. 372

Cle Elum Lake, foot of, west side of sec. 2, T. 20 N., R. 14 E., 150 feet east of lake, just east of road and 20 feet from northwest corner of Lake View House; iron post stamped "2150 T" (=P. B. M. 1 by U. S. R. S. line A) .. 2, 151. 622

Cle Elum Lake, foot of; water level May 24, 1898..... 2, 127. 9

Cle Elum Lake, head of, in highest point of large granite boulder 15 feet from lake, 30 feet from road; aluminum tablet stamped "2140 T" 2, 141. 319

Morgan ranch, 200 feet east of, 15 feet west of road and 3 feet from fence; iron post stamped "2157 T" 2, 158. 587

Big Salmon Lasac, 10 feet west of road, 6 feet from edge of low river bench, 150 feet east of river; iron post stamped "2394 T" 2, 395. 791

Clearing, containing 3 deserted cabins, on edge of and just east of road, in top of large boulder with "U.S.M.M. No. 2, Cle Elum Mining District" cut on west face; aluminum tablet stamped "2838 T" 2, 839. 892

Boulder Creek, 100 feet south of bridge over, 30 feet southeast of road, 12 feet northeast and 20 feet northwest from deserted log cabins, 50 feet southwest from 6 by 9 granite boulder; iron post stamped "2895 T" 2, 896. 572

Camp Creek ford, 20 feet south of, 100 feet southeast of old log cabin, on bench east of road; iron post stamped "3086 T" 3, 087. 225

Fortune Creek, 30 feet north of north end of bridge over, 18 feet east of road; iron post stamped "3204 T" 3, 205. 096

From Easton north along highway to Lake Kachess (spur line; elevations unreliable).

Lake Kachess, at end of road 45 feet west of old cabin built of square logs, 50 feet from edge of lake and 675 feet north of boathouse; iron post stamped "2235" (=P. B. M. 1 by U. S. R. S. line B)..... 2, 230. 530

Lake Kachess; surface of water Sept. 6, 1897..... 2, 222. 0

From Martin north along highway to Snoqualmie Pass (spur line; elevations unreliable).

Lake Keechelus, at foot, southeast end of, 35 feet northwest of wagon road, 68 feet southeast of lake, 120 feet south of old sawmill site, 500 feet southwest of ford at head of Yakima River, 20 feet south of bench mark is 3-foot hemlock tree blazed on three sides; iron post stamped "2479" (=P. B. M. 1 by U. S. R. S. line C)..... 2, 475. 396

Gold Creek trail, directly opposite and 6 feet south of road, small burn east of bench mark; iron post stamped "2502" 2, 498. 510

From mouth of Bumping River north to Mathews Cabin (part of spur line; elevation unreliable).

Mathews cabin, 1.0 mile southeast of, at summit of road, on trail 0.5 mile northwest of where it leaves river; iron post stamped "3119 T" 3, 119. 068

The United States Reclamation Service has established the following bench marks in the Snoqualmie quadrangle:

"A" line for control of Cle Elum dam site.

Cle Elum Lake, near outlet of, 500 feet nearly east of house at present dam, 20 feet north of trail running east from said house, 250 feet due north of Cle Elum River at point 700 feet below dam (1905), some 30 feet southeast of dead fir tree blazed and marked "2192.435;" iron post stamped "2192" (p. b. m. No. 2).....	Feet. 2, 193. 807
Cle Elum Lake, 1,000 feet below outlet, on left bank directly above Government gaging station and 200 feet north of same, 20 feet north of trail leading south from house at outlet, on top of high ridge, 550 feet east of bench mark No. 2, two blazed pine trees are within 50 feet, marked "2248.886" and "2250.661," 120 feet above river gage; iron post stamped "2249" (p. b. m. No. 3).....	2, 250. 853

"B" line for control of Kachess dam site.

Lake Kachess, near outlet of, on east side of river, 300 feet southeast of crib dam, 200 feet east of house on road side, 10 feet west of station 2 (P. T. sheet No. 1, Kachess dam site); iron post stamped "2253" (p. b. m. No. 2).....	2, 249. 077
Lake Kachess, near outlet of, on west side of river, 400 feet north of west from crib dam, 15 feet south of west from station 4 (P. T. sheet No. 1, Kachess dam site); iron post stamped "2250" (p. b. m. No. 3).....	2, 245. 726

"C" line for control of Keechelus dam site.

Lake Keechelus, on ridge near outlet of, 205 feet north of timber dam on Yakima River, 190 feet east of public road, 500 feet east of lake; iron post stamped "2510" (p. b. m. No. 2).....	2, 506. 110
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The following bench marks were established in cooperation with the State in 1910 by D. S. Birkett in connection with leveling in the Cedar Lake quadrangle:

From Humpback Creek fill (1 mile east of Rainy Creek) northeast along Chicago, Milwaukee & St. Paul Ry. to Snoqualmie Pass, tying at that point with spur line; northwest along highway from Martin.

Rockdale, 0.4 mile west of, west end of trestle FF 82 (being filled), 30 feet south of track, in base of 2-foot fir stump 3 feet high; copper nail in notch, aluminum tag stamped "2485".....	2, 485. 76
Rockdale, 8 feet north of track, in concrete abutment of water tank; aluminum tablet stamped "Prim. Trav. Sta. No. 11, 1910, 2508 Wash".....	2, 508. 019
Laconia, 200 feet west of station, in foundation of water tank at east end; copper nail, aluminum tag stamped "3003".....	3, 003. 89
Snoqualmie Pass, 8 feet south of road at summit, 0.25 mile west of small lake in marsh north of road; iron post stamped "3131" and "3127 Wash".....	3, 127. 213

SPOKANE QUADRANGLE.

[Latitude 47° 30'-48°; longitude 117°-117° 30'.]

From Moot southwest along Northern Pacific Ry. to Marshall.

Precise leveling by the U. S. Coast and Geodetic Survey.

Hauser Junction, 2 miles west of station, 10 meters northeast of highway crossing, 50 meters north of track; iron post (U. S. C. & G. S. b. m. S ₃)....	2, 108. 769
Moab, 0.25 mile west of station, 30 meters south of track, iron post (U. S. C. & G. S. b. m. T ₃).....	2, 074. 668

Otis Orchards, 0.5 mile east of station, at highway crossing, 20 meters south of track; iron post (U. S. C. & G. S. b. m. U ₃).....	Feet. 2, 079. 989
Otis Orchards 1.5 miles west of station, 120 meters south of milepole 72, 25 meters southeast of track; iron post (U. S. C. & G. S. b. m. V ₃).....	2, 058. 441
Velox siding, 400 meters west of station along Northern Pacific Ry., 30 meters north of milepole 74; iron post (U. S. C. & G. S. b. m. W ₃).....	2, 040. 255
Irvin, 0.5 mile east of station, in west end of bridge over Spokane River, 210 meters west of mile pole 76; disk (U. S. C. & G. S. b. m. X ₃).....	1, 993. 257
Irvin, 1.5 miles west of station, in concrete abutment at Inland Empire-Northern Pacific crossover, at mile 78; disk (U. S. C. & G. S. b. m. Y ₃)..	1, 973. 379
Irvin, 4.25 miles west of station, 15 meters west of milepole 80; U. S. G. S. iron post stamped "1,953" (U. S. C. & G. S. b. m. Z ₃).....	1, 950. 439
Spokane, 1 mile east, along Northern Pacific Ry., from station in the signal tower at Northern Pacific and Chicago Milwaukee & St. Paul crossover; disk (U. S. C. & G. S. b. m. A ₄).....	1, 915. 731
Spokane, 2 miles southwest of station, along Northern Pacific Ry., 300 meters south of mile pole 87, 20 meters west of track; iron post (U. S. C. & G. S. b. m. B ₄).....	1, 864. 196
Spokane, 4 miles southwest of station, 260 meters south of milepole 89, 30 meters west of track; U. S. G. S. iron post stamped "1,857" (U. S. C. & G. S. b. m. C ₄).....	1, 854. 858
Marshall, 2 miles east of station, 35 meters southwest of milepole 91, 30 meters west of track, 3 meters north of telegraph pole; iron post (U. S. C. & G. S. b. m. D ₄).....	1, 955. 364
Marshall, 400 meters east of station, in wall of Northern Pacific signal tower; disk (U. S. C. & G. S. b. m. E ₄).....	2, 120. 245

From Marshall northeast along Northern Pacific Ry. to Spokane.

Primary leveling in 1898 by J. H. Carlock, in 1903 by E. M. Fry.

Marshall, 100 feet northwest of railroad crossing and 100 feet east of post-office building; iron post stamped "2130 T".....	2, 127. 923
Milepost Wallula 157, Hope 89, 660 feet south of, 48 feet west of center of track, 2 feet south of fence, 90 feet southwest of cattle guard; iron post stamped "1857 T" (recovered by U. S. C. & G. S.).....	1, 854. 858
Spokane, in front of Northern Pacific Ry. station; top of rail.....	1, 906. 9
Spokane, in front of Great Northern Ry. station; top of rail.....	1, 877. 4
Spokane, center of astronomic pier in courthouse grounds; aluminum tablet stamped "1891 T".....	1, 888. 500
Spokane, in southeast corner of brick wall of station, in second course of brick above stone foundation, fourth row west from corner; bronze tablet stamped "1914 T".....	1, 911. 174

From Spokane east along Northern Pacific Ry. to State line.

Milepost Wallula 166, Hope 80, 60 feet northwest of, 40 feet north of railroad; iron post stamped "1953 T" (recovered by U. S. C. & G. S.).....	1, 950. 439
Trent, 2 miles east of, 100 feet north of railroad at road crossing; iron post stamped "2041 T".....	2, 038. 836
Otis siding, 0.5 mile east of, at northwest corner of fence at road crossing, 50 feet north of center of track; iron post stamped "2083 T".....	2, 080. 201

From Spokane north along Spokane Falls & Northern (Great Northern) Ry. to Dragoon, thence along highway to Chattaroy.

Mead, 100 feet southwest of station, in line with telegraph poles; iron post stamped "1906 S".....	1, 903. 228
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Dragoon, 90 feet west of station, 20 feet east of road; iron post stamped "1745 S".....	Feet. 1,742.972
Chattaroy post office, 1,500 feet east of, 30 feet southwest of Davis mill road crossing Great Northern Ry., in center of boulder 60 by 40 inches, 2 feet above ground; aluminum tablet stamped "1799 S".....	1,796.198
From Chattaroy along Great Northern Ry. to point 1 mile north of Milan.	
Milan, 220 feet southeast of station, 160 feet northwest of post office, in fork of roads; iron post stamped "1779 S".....	1,777.027
From point near Milan east and South along highway via Medler, Fish Ranch, Spirit Lake, and Fish Lake to Rathdrum (part of line).	
Elk post office, 4 miles east of, 60 feet northeast of fork of roads, 480 feet south of corner of secs. 13, 14, 23, and 24, T. 29 N., R. 44 E., in boulder 60 by 40 inches, 20 inches above surface of ground; aluminum bolt stamped "U. S. G. S. 2468 ft. S. B. M.".....	2,465.647
Elk post office, 7.5 miles east of, on summit of road 40 feet south of bend, 160 feet west of precipitous break in ridge, in boulder 40 by 30 inches, 20 inches above ground; aluminum bolt stamped "U. S. G. S. 3112 ft. S. B. M.".....	3,110.154
Washington-Idaho State line, 120 feet west of, 240 feet north of old bridge over Blanchard Creek, 20 feet north of road, in center of boulder 40 by 30 inches, 20 inches above ground; aluminum tablet stamped "2382 S".....	2,379.510
From Spokane north along highway via Tomkinson triangulation station to Mead.	
Spokane, 2.5 miles north of, 20 feet east of fork of road, 280 feet north-east of spring west of road, in root of pine tree; nail.....	1,899.70
Tomkinson triangulation station, about 800 feet southwest of Thomas Tomkinson's house, 400 feet west of road, about 7 miles north of Spokane, in center of stone post; aluminum tablet stamped "2372 S".....	2,369.366
Mead, 2.5 miles southwest of, 70 feet northeast of junction of Mead road with Spokane-Clarks Mill road, 10 feet west of road, in 12-inch pine tree; spike.....	1,949.64
Mead, 0.5 mile southwest of, north of forks of road to Spokane, in root of 24-inch pine tree; nail.....	1,922.46
From Dragoon west and south along highway to Tomkinson triangulation station.	
Wayside, in northwest corner of Odd Fellows Hall, 2 feet above ground, in stone wall; aluminum tablet stamped "2065 S".....	2,062.477
Wayside, 5 miles south of, 20 feet north of forks of road, west of road, in root of 14-inch pine tree; nail.....	2,028.90
Wayside, 9 miles southwest of, 80 feet east of road, in sec. 28, T. 27 N., R. 42 E., in center of boulder 60 by 40 inches, 2 feet above ground; aluminum bolt stamped "U. S. G. S. 2889 ft. S. B. M.".....	2,886.860
From Chattaroy east along highway to Davis Mill, thence south and west to point near Mead.	
Chattaroy, 5 miles east of, 120 feet northwest of corner of secs. 20, 21, 28, and 29, T. 27 N., R. 44 E., 100 feet northwest of forks of road, in boulder 60 by 36 inches, 2 feet above ground; aluminum bolt stamped "U. S. G. S. 2065 ft. S. B. M.".....	2,062.372
Davis house, 7 miles south of, 60 feet southwest of road crossing, in SW. ¼ sec. 27, T. 27 N., R. 44 E.; iron post stamped "1922 S".....	1,919.542
Mead, 2.5 miles northeast of, at northeast corner of crossroads, in Tps. 26 and 27 N., Rs. 43 and 44 E.; iron post stamped "1881 S".....	1,878.845

From point 4 miles northeast of Mead along highway south and east by circuitous route to State line.

Newman Lake, 4.5 miles west of, 30 feet north of forks of road at top of hill, in root of 10-inch pine tree west of road; tack.....	2,729.81
Newman Lake, 0.5 mile north of, 60 feet southeast of schoolhouse, 8 feet north of road; iron post stamped "2151 S".....	2,148.856
Newman Lake, water surface.....	2,127.6
Newman Lake, 0.5 mile east of, 3 miles north of Northern Pacific Ry., 30 feet south of forks of road, 1,000 feet east of house, in center of boulder 30 by 20 inches, 1 foot above ground; aluminum bolt stamped "U. S. G. S. 2147 ft. S. B. M.".....	2,144.486

From point 7 miles northeast of Mead south along highway to Northern Pacific Ry.

Pleasant Prairie, center of crossroads; iron post stamped "2431 S".....	2,428.993
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From Chattaroy north along highway to point near Milan.

Chattaroy, 500 feet south of, 4 feet north of road, in top of stone 20 by 10 inches, 6 feet above ground; cut cross.....	1,698.77
Chattaroy, 4.8 miles north of, northeast corner of forks of road, in top of boulder 10 by 8 inches, 6 inches above ground; cross.....	1,857.54

From Wayside along highway north to Deer Park, thence southeast along Spokane Falls & Northern (Great Northern) Ry. to Dagoon.

Wayside, 4 miles northwest of, 10 feet northeast of corner of secs. 27, 28, 33, and 34, T. 28 N., R. 42 E.; iron post stamped "2093 S".....	2,090.767
Deer Park, southeast corner of crossroads at station, 70 feet southeast of post office, 130 feet east of Spokane Falls & Northern Ry.; iron post stamped "2117 S".....	2,114.621
Buckeye, in front of station; top of rail.....	1,961.30

From Deer Park northeast along highway via West Branch post office to point 1 mile north of Milan.

Corner of secs. 19, 24, 25, and 30; top of stone.....	2,218.78
Deer Park, 4.5 miles northeast of, 50 feet south of forks of roads, 80 feet west of county road, 170 feet northwest of corner of secs. 19, 20, 29, and 30, T. 29 N., R. 43 E.; iron post stamped "2268 S".....	2,266.067
Westbranch, 200 feet north of post office, 30 feet west of bridge over flume, 3 feet north of road, in top of boulder 48 by 36 inches, 1 foot above ground; aluminum bolt stamped "U. S. G. S. 1906 ft. S. B. M.".....	1,903.960

From point near Otis along highway south 3 miles, thence east via Liberty Lake to State line, thence north to Northern Pacific Ry.

Liberty Lake, 500 feet north of, 100 feet west of schoolhouse, 20 feet east of road; iron post stamped "2098 S".....	2,096.061
Liberty Lake; water surface.....	2,050.6

From southeast corner of sec. 18, T. 25 N., R. 45 E., south along highway 2 miles, thence northwest along highway and railroad to Spokane.

Sprague Avenue road, 2.2 miles southwest of, 130 feet north of forks of road, 60 feet northeast of schoolhouse; iron post stamped "2131 S"....	2,128.175
Sprague Avenue road, 4.8 miles southwest of, 100 feet south of forks, 4 feet east of road, in root of 30-inch pine tree; spike.....	2,328.18
East Spokane, 80 feet west of post office, 20 feet south of road, 160 feet south of track; iron post stamped "1933 S".....	1,930.541



From East Spokane southeast along track of Oregon-Washington R. R. & Navigation Co. to Buckley.

Chester, 200 feet northwest of section house, 30 feet north of fork of roads,	Feet.
60 feet north of track; iron post stamped "2011 S".....	2,008.361
Mica, in front of station; top of rail.....	2,476.32
Mica, 250 feet east of post office, 100 feet west of track, 80 feet south of fork of road, in center of boulder 50 by 30 inches, 30 inches above ground; aluminum bolt stamped "U. S. G. S. 2478 ft. S. B. M".....	2,476.026
Freeman, 1.8 miles southeast of, 60 feet south of road crossing, 50 feet east of forks, 200 feet southwest of church; iron post stamped "2600 S".....	2,597.906

From Olsen switch east along highway to State line.

W. F. Horton's house, 50 feet south of road, 800 feet west of State line, in masonry in northeast corner; aluminum bolt stamped "U. S. G. S. 2690 ft. S. B. M.".....	2,687.342
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From point 1.8 miles south of Freeman west along highway to Northern Pacific Ry., thence north to Marshall.

Oregon-Washington R. R. & Navigation Co.'s track, 3 miles west of, 20 feet south of fork of roads, at top of hill, in center of boulder 28 by 12 inches, even with ground; aluminum bolt stamped "U. S. G. S. 2512 ft. S. B. M.".....	2,509.728
Hangman Creek, 0.2 mile east of, 800 feet west of fork of road, south end of ridge, 20 feet north of road, in center of boulder 30 by 20 inches, even with ground; aluminum bolt stamped "U. S. G. S. 1927 ft. S. B. M.".....	1,924.964
Hangman Creek, 2.2 miles west of, at top of hill, 50 feet east of forks of road, 140 feet north of telephone line; iron post stamped "2454 S".....	2,451.936
Palouse branch of Northern Pacific Ry., 0.2 mile north of milepost 4, 80 feet east of road crossing, 40 feet east of small bridge, 20 feet east of forks of road; iron post stamped "2272 S".....	2,269.850

From Spokane west along Great Northern Ry. 4 miles.

Alta Vista, in front of station; top of rail.....	1,820
Junction of Great Northern and Seattle & Lake Shore railroads, 0.8 mile west of, 30 feet southwest of point of curvature, in north face of boulder 12 by 10 feet, 10 feet above ground; aluminum bolt stamped "U. S. G. S. 1903 ft. S. B. M.".....	1,900.854

From junction of Great Northern and Spokane, Portland & Seattle railroads south 7 miles.

Junction, 7.0 miles south of, 130 feet east of road crossing, 80 feet east of track, in center of boulder 30 by 20 inches, 20 inches above ground; aluminum bolt stamped "U. S. G. S. 2267 ft. S. B. M.".....	2,264.158
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From Marshall south along Northern Pacific Ry. to Garfield (part of line).

Marshall, 100 feet northwest of railroad crossing; iron post stamped "2130 S".....	2,127.647
Milepost 4, 0.2 mile north of, 50 feet east of track; iron post stamped "2272 S".....	2,269.691

From Lockwood south along track of Oregon-Washington R. R. & Navigation Co. to Rockford.

Lockwood, 200 feet southwest of church, 60 feet south of road crossing; iron post stamped "2600 S".....	2,597.906
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STEHEKIN QUADRANGLE.

[Latitude 48°-48° 30'; longitude 120° 30'-121°.]

From head of Lake Chelan up Stehekin River to Bridge Creek

Primary leveling in 1897 by P. F. Byrne, in 1899 by E. M. Fry, and in 1901 by C. E. Hill.	Feet.
Log cabin, on rock in trail near head of Lake Chelan.....	1,086.0
Cabin on trail, 0.2 mile south of, on 3-foot cottonwood tree.....	1,202.7
Pine tree 2 feet in diameter, 25 feet to right of trail, on top of stone 5 feet north of tree.....	1,285.96
Side of ravine, top of stone of 2 cubic yards volume, on right side of trail; elevation marked on stake.....	1,414.01
Junction of Agnes and Stehekin rivers, 105 feet north of river bank, in an open space about 1,000 feet east of junction of rivers, in root of 2-foot pine tree; nail, elevation marked on a board nailed to a tree.....	1,488.3
Twin Lake, between two 4-foot pine trees; these trees are 20 feet apart and near dry outlet of lake, on highest point of rock 5 by 4 by 3 feet.....	2,152.40
Narrow bridge on small stream, at corner of; top of rock 6 by 5 by 3 feet..	2,001.00
Cabin, 155 feet north of, in root of 5-foot cedar tree; nail.....	2,059.79
Bridge Creek, 225 feet south of new bridge, in root of 2½-foot fir tree; nail..	2,174.58
NOTE.—The remainder of this line is unadjusted and closes 3 feet high.	
Park Creek bridge, at west end of, in 18-inch fir stump; nail.....	2,255.72
State road camp on Stehekin River, 125 feet west of trail leading to, on top of rock 8 by 6 by 6 feet, 22 feet south of 3-foot tree.....	2,689.18
Pershall cabin, 25 feet from northeast corner of, in root of 2-foot cottonwood tree; nail.....	3,101.67
Pass, at first summit of, in root of hemlock tree; nail.....	4,900.93
Summit; iron post stamped "5423".....	5,393.286

From Twisp west along highway and trail up Twisp Creek and down Bridge Creek to its mouth.

South Creek, 3.0 miles east of crossing, in top of stump in center of road; nail.....	2,890.07
South Creek crossing, 300 feet west of, south side of road. in root of fir tree; nail.....	3,120.10
Gilbert camp, 50 feet east of assay office, south side of street; iron post stamped "3527 T".....	3,527.567
Gilbert, 2.0 miles west of, north side of trail, at foot of 45-inch fir tree; on top of stone.....	4,251.89
Gilbert, 3.0 miles west of, 4 feet east of north end of bridge over Twisp River; cross on top of large flat boulder.....	4,485.04
Twisp Pass, summit of, 10 feet south of trail; iron post stamped "6066 T".....	6,066.274
Twisp Pass, 2.5 miles west of, south side of trail, on top of stone.....	5,063.72
Twisp Pass, 5 miles west of, 5 feet south of trail, in root of tree; nail.....	3,802.68
Twisp Pass, 11 miles west of, west side of trail, on top of stone.....	3,473.90
Twisp Pass, 12 miles west of, 0.2 mile east of Maple Creek, south side of trail, in root of tree; nail.....	3,190.23
Bridge Creek, 0.5 mile east of mouth of, 10 feet south of trail, in root of 6½-foot cedar tree; nail.....	2,556.32
Bridge Creek, mouth of, 225 feet south of new bridge, in root of 30-inch fir tree; nail.....	2,174.53

Up Chewawa and Buck creeks northwest along highway to Buck Creek Pass (part of single-spur line from Leavenworth; elevations unreliable).

Rock Creek, 4.5 miles northwest of, 6 feet east of trail in middle of open bushy west slope about 200 feet south of little stream, in rock about 6 feet square and 3 feet high; bronze tablet stamped "2637 T".....	2,628.818
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Rock Creek, 6.5 miles northwest of, 2 feet east of trail, 300 feet north of small stream, in root of big fir tree; nail marked "2660".....	Feet. 2, 651.14
Phelps Creek, 125 feet south of, 36 feet northeast of trail, in big rock; bronze tablet stamped "2782 T".....	2, 773.595
Phelps Creek, 0.8 mile northwest of, 60 feet north of little creek, 6 feet west of trail, in root of hemlock tree; nail marked "2914".....	2, 895.87
Phelps Creek, 1.5 miles northwest of, near north edge of big open burn, east of trail, in root of big fir tree; nail marked "3044".....	3, 025.74
Buck Creek, 900 feet southeast of, 2 feet east of Chewawa Creek, top of quartz-crowned projection on bedrock about water level (high); marked "3217".....	3, 198.87
Chewawa Creek, 2 feet east of, 1,125 feet north of Buck Creek, 12 feet north of trail, in bedrock about high-water level; bronze tablet stamped "3373 T".....	3, 354.208
Forks of Buck and Chewawa creeks, 1 mile northwest of, about 200 feet northwest of little creek in meadow, 12 feet west of trail, in root of fir tree; nail marked "3840".....	3, 821.67
Forks of Buck and Chewawa creeks, 2 miles northwest of, 11 feet west of trail, in root of spruce tree; nail marked "4254".....	4, 235.34
Forks of Buck and Chewawa creeks, 3 miles northwest of, 675 feet southeast of Buck Creek ford, 4 feet west of trail; top of big rock marked "4471".....	4, 452.48
Buck Creek, surface of water at trail crossing, September 20, 1901.....	4, 475.8
Forks of Buck and Chewawa creeks, 4 miles northwest of, 135 feet west of Buck Creek, 9 feet east of trail, in top of big plane-topped slaty rock about 15 inches in diameter; bronze tablet stamped "4885 T".....	4, 866.200
Buck Creek, at extreme headwaters of, 5 miles northwest of forks of Buck and Chewawa creeks, 600 feet north of trail, 500 feet south of lowest sag in saddle at summit of Cascade Divide, in large rock; tablet stamped "5796".....	5, 777.586
Summit of pass at headwaters of Buck Creek; ground at lowest sag in saddle.....	5, 766.83

STILAGUAMISH QUADRANGLE.

[Latitude 48°-48° 30'; longitude 121° 30'-122°.]

From Hartford Junction northeast along Northern Pacific Ry. to Granite Falls, thence northwest along highway to Arlington.

Primary leveling in 1897 by G. H. Pratt and Fred Graff and in 1898 by L. D. Ryus.

Granite Falls, 600 feet west of station, south side of track and north of wagon road, in V formed by road and track crossing; iron post stamped "Prim. Trav. Sta. No. 6, 386, Wash., 1909"..... 385.120

From point near Silverton along Everett & Monte Cristo (Northern Pacific) Ry. and down Sauk River to Granite Falls.

Bridge 42, Perry Creek, 120 feet west of, on south side of track; on 24-inch hemlock stump..... 1, 748.28
 Bridge 37, 25 feet east of west end of, on larch stump 36 inches in diameter. 1, 645.92
 South Fork of Stilaguamish River, bed of, opposite bridge 37..... 1, 630.0
 Milepost 30, 670 feet west of, 15 feet south of track, on 4-foot hemlock stump. 1, 574.34
 Forty-five Mining Co.'s ore house, 450 feet east of, 15 feet north of center of track; on 5-foot cedar stump..... 1, 478.14
 Silverton, 1,000 feet east of water tank, 210 feet east of milepost 29, 20 feet north of track, in granite boulder 6 by 6 by 6 feet; copper bolt stamped "1521"..... 1, 522.84

Milepost 28, about 1,800 feet west of, south side of track, on hemlock stump 36 inches in diameter.....	Feet. 1,437.10
Milepost 27, about 1,850 feet west of, on north side of track, on hemlock 36 inches in diameter.....	1,385.13
Stilaguamish River, third crossing of, 210 feet west of bridge 30, south of track, on spruce stump 4 feet in diameter.....	1,281.22
Boardman Creek, about 2,200 feet east of west end of bridge 29 over, in T. 30 N., R. 9 E., probably sec. 20, 40 feet south of railroad, on west end of ledge which rises some 40 feet above track, bench mark is 4 feet higher than track; copper bolt stamped "1247".....	1,248.483
Mud tunnel, 400 feet northwest of west end of, 20 feet west of track, on hemlock 36 inches in diameter.....	1,179.04
Bridge 23, 120 feet west of, south side of track, on hemlock stump 18 inches in diameter.....	1,063.99
Bridge 19, 1,050 feet west of, north side of track, on hemlock stump 18 inches in diameter.....	945.83
Bridge 17, 250 feet west of, in T. 30 N., R. 8 E., about 400 feet east of section line between secs. 7 and 8, 15 feet south of Everett & Monte Cristo Ry. track, in a 6-foot cut; copper bolt in slate rock stamped "897".....	898.584
Bridge 15, 250 feet east of, 20 feet south of track, on hemlock stump 4 feet in diameter.....	866.90
Tunnel 5, east portal of; top of rail.....	787.3
Tunnel 4, east portal of; top of south rail.....	764.6
Tunnel 3, east portal of; top of south rail.....	745.1
Tunnel 2, west portal of; top of tie at.....	621.5
Stilaguamish River, road down, at junction with Sauk River road, 600 feet west of Tunnel 2, north of track, on 24-inch fir stump.....	605.4
Milepost 9, 20 feet west of, on opposite side of track from, in side of solid rock cut about the middle of 10°-curve to the right, 10 feet south of center of track; copper bolt stamped "460".....	461.031
Blackman Spur, 470 feet west of headblock, 15 feet north of track, on hemlock stump 30 inches in diameter.....	440.17
Granite Falls, 350 feet west of station, 40 feet south of track, on first ridge west of station; iron post stamped "397".....	397.806

From Silverton south along trail over divide to Williamson Creek, thence down creek to Sultan River.

Forty-five Mining Co.'s tram, 40 feet south of the fifth mast, on hemlock stump 36 inches in diameter, beside trail.....	1,877.05
Forty-five Mining Co.'s tram, 40 feet southwest of the ninth mast, on larch stump 24 inches in diameter, on trail.....	2,361.53
First loop in trail cut out of solid rock, 50 feet below, 50 feet below tram, 10 feet below trail, on hemlock stump 20 inches in diameter.....	2,330.44
Second loop in trail cut out of solid rock, on hemlock tree 20 inches in diameter, where trail begins to descend.....	3,377.32
Michigan Gulch, 25 yards south of tram, 10 feet north of trail, on larch tree 36 inches in diameter.....	3,573.42
Summit, 5 feet west of mast on tram, on larch stump 36 inches in diameter.....	4,177.07
Summit, about 0.5 mile south of, on south side of trail, on larch tree 30 inches in diameter.....	3,514.59
Adelaide Gulch, near intersection of two small streams, on south side of trail, on hemlock 12 inches in diameter.....	3,019.13
Forty-five Mining Co.'s sawmill, 80 feet east of, on larch stump above skid road.....	2,582.97

Williamson Creek, intersection of trail with right bank of, on larch tree 24 inches in diameter.....	Feet. 1, 903. 89
Log cabin, 850 feet south of, on east side of trail, on larch tree 36 inches in diameter.....	1, 813. 05
T. 29 N., R. 10 E., probably in sec. 7, 200 feet south of small creek, in detached rock 10 by 10 by 5 feet; copper bolt stamped "1688".....	1, 689. 93

From Granite Falls southeast along highway to Lake Roesiger.

Granite Falls, 350 feet west of station, 40 feet south of track, on first ridge of solid land west of station; iron post stamped "397".....	397. 806
Granite Falls, 1,200 feet east of, on 18-inch fir tree on right of road.....	398. 12
Kerren's, across bridge opposite, 5-foot cedar stump, left of road.....	440. 57
Wetmore's slashing, 1,000 feet south of, right side of road, on root of cedar stump.....	511. 87
Swamp, 150 feet beyond bridge over, left of road; on 18-inch hemlock tree.....	497. 31
Menzel Lake, opposite middle of, on hemlock stump, right of road.....	505. 75
Henry Menzel house, on 2-foot hemlock stump opposite, left of road.....	540. 58
Chowndings, 1,250 feet north of, in clearing, on 18-inch hemlock tree, left of road.....	461. 80
Barstow house, 40 feet north of, near trail cutting across to Lake Roesiger wagon road, on 18-inch hemlock stump.....	524. 30
Barstow house, 1,000 feet southeast of, on 3-foot hemlock tree, left of trail.....	639. 04
Lake Roesiger road, 800 feet south of house, on 12-inch hemlock left of road.....	733. 49

From Chowndings along highway to Kelley ranch.

Chowndings, 1,500 feet beyond, on 24-inch hemlock tree left of road.....	486. 75
Schoolhouse, 800 feet beyond, on 30-inch hemlock stump right of road....	491. 42
Russell house, 500 feet west of, on 24-inch hemlock stump right of road...	504. 95
Law house, 1,200 feet west of, on 36-inch hemlock stump right of road....	549. 92
Crow house, 100 feet north of, on 36-inch hemlock stump in Crow's field...	562
Summit of divide, on 5-foot cedar snag on right of trail.....	740. 32
Feemster house, 200 feet northwest of, on 5-foot cedar tree left of trail.....	639. 83
Kelley house, 1,200 feet west of, on 36-inch cedar tree near creek right of trail.....	664. 93
Kelley house, 1,250 feet east of, on 18-inch hemlock tree 15 feet left of trail.....	708. 43
Kelley house, 1,750 feet east of, on boulder on side of hill, 25 feet to left of trail, 275 feet from Pilchuck River; copper bolt stamped "746".....	747. 500

From Granite Falls northeast along highway to Canyon Creek.

Granite Falls, 0.5 mile northeast of, northwest side of road, 8 feet from fence, 75 feet from gate to house, in twin fir stump; nail.....	440. 27
Granite Falls, 1 mile northeast of, east of road at curve, in 76-inch cedar stump 10 feet high; nail.....	454. 24
Granite Falls, 1.5 miles northeast of, east side of road at bend, in very prominent 20-inch hemlock tree; nail.....	388. 25
Stilaguamish River, South Fork, 100 feet southwest of bridge over, northwest side of road, in 20-inch hemlock tree; nail.....	362. 73
Stilaguamish River, South Fork, 0.5 mile northeast of, southeast side of road, in 20-inch fir stump 4 feet high; nail.....	460. 68
Stilaguamish River, South Fork, 1 mile northeast of, northwest of road, top of ridge, in 24-inch hemlock tree; nail.....	568. 47
Canyon Creek, trail to footbridge, at junction with road.....	523. 9
Stilaguamish River, South Fork, 1.25 miles northeast of bridge over, 150 feet from Canyon Creek, north of road on hillside, in 36-inch fir tree; nail.....	446. 35

	Feet.
Canyon Creek, at mouth of small stream from north, 150 feet west of house.	430. 52
Canyon Creek, 0.25 mile north of, east side of trail, on first bench, in 34-inch fir stump; nail.....	479. 16
T. 31 N., R. 7 E., south quarter corner of sec. 32, 125 feet northeast of, in rock projecting 2.5 feet out of hill; copper bolt stamped "545 M. C." ¹ ..	547. 725
From Barlow Pass along highway northwest down Sauk River to Darrington, thence west along Northern Pacific Ry. to bridge over Stilaguamish River.	
Raucher cabin, 600 feet north of, T. 31 N., R. 10 E., 0.5 mile southeast of meander corner between secs. 4 and 9, on west of road, on cedar tree 18 inches in diameter.....	732. 59
Meander corner between secs. 4 and 9, 300 feet (along road) north of, T. 31 N., R. 10 E., on west side of road, about 40 feet from river, in cedar tree 12 inches in diameter.	710. 98
Milepost 12, about 1,000 feet south of, 150 feet north of bench of land 20 feet higher than bench mark, on west of road, on 30-inch hemlock tree..	689. 56
Milepost 11, about 1,800 feet southeast of, 100 feet north of short ascent 12 feet high to bench of land, 30 feet from river bank, on cottonwood 28 inches in diameter, on west of road.....	662. 05
Milepost 11, about 250 feet northwest of, 200 feet (along road) north of log cabin, on fir tree 24 inches in diameter, west of road.....	646. 35
Clear Creek, 50 feet east of, at point about 150 feet above its mouth, 50 feet south of a log cabin, in ledge on south of road; copper bolt stamped "625".	626. 940
Clear Creek, about 4,500 feet northwest of, about 1,200 feet (along road) north of first clearing north of Clear Creek, on cedar tree 30 inches in diameter on east of road.....	593. 57
Milepost 8, about 1,500 feet north of, 12-inch fir tree on west of road.....	575. 87
Emmons house, 100 feet northwest of, at junction of road down Sauk River with road to Darrington post office, on fir tree 18 inches in diameter....	566. 92
Stilaguamish River, road down, junction with Sauk River road, 58 feet west of Sauk River road and 20 feet south of Stilaguamish road, in fir tree 28 inches in diameter; nail.....	556. 88
Stilaguamish River, road down, junction with Sauk River road, 0.25 mile west of, north of road, on cedar tree 8 inches in diameter.....	545. 28
Milepost 6, 500 feet west of, 140 feet west of point where road makes a sharp turn to west, on hemlock tree 15 inches in diameter.....	532. 25
Darrington "burn," on west side of, sec. 9, T. 32 N., R. 9 E., 10 feet north of trail, halfway down the slope between bench and bottom land, slope faces south, a log barn on Squire Creek bottom bears south-southeast about 600 feet distant, in granite boulder 3.5 by 2.5 feet and 1 foot above ground; copper bolt stamped "496".....	498. 161
James Smith ranch, by bars across trail leading to, 150 feet west of Squire Creek; on cedar tree 8 inches in diameter.....	456. 88
W. Spoerhase ranch, opposite gate entrance to, on 36-inch cedar tree....	454. 69
T. 32 N., R. 8 E., secs. 12 and 13, 100 feet west of quarter corner between, north side of trail, on hemlock tree 20 inches in diameter.....	454. 66
T. 32 N., R. 9 E., 20 feet northwest of corner to secs. 11, 12, 13, and 14, on cedar tree 18 inches in diameter, which is the northwest bearing tree of corner.....	467. 06
Cavanaugh's trail, point of branching, on cedar stump 18 inches in diameter on north side of trail.....	429. 69

¹ The atlas sheet position is T. 30 N., R. 7 E., south of north side of sec. 5, and the actual location is therefore doubtful.

Boulder Creek, top of descent toward, 80 feet east of, on west edge of bench, on hemlock tree 14 inches in diameter.....	Feet. 412.00
Joe Pott's clearing, sec. 8, T. 32 N., R. 8 E., on trail to, and about 700 or 800 feet southwest of cabin, about 2,000 feet northerly from main trail down Stilaguamish River, on south side of dry watercourse bearing east and west; in rock 3.5 by 2.5 feet and 1.5 feet above ground; copper bolt stamped "303".....	305.328
T. 32 N., R. 8 E., quarter corner between secs. 7 and 8, 150 feet west of creek in ravine, south of trail, on cedar tree 4 feet in diameter.....	374.14
Milepost 1, 40 feet west of, north side of trail; on 4-foot cedar tree.....	371.79
T. 32 N., R. 7 E., quarter corner between secs. 11 and 12, about 0.5 mile east on left bank of North Fork of Stilaguamish River, on south side of trail, top of low bluff; on cedar tree 36 inches in diameter.....	299.90
T. 32 N., R. 7 E., about 600 feet southeast of quarter section corner between secs. 11 and 12, 15 feet north of abandoned road which branches off from the new wagon road about 200 feet northeast, in slashing 30 feet north of steep descent to North Fork of Stilaguamish River about 50 feet below, on north slope of rock 6.5 feet long and 2.5 feet wide, roof-shaped; copper bolt stamped "286".....	288.100
N. C. Hollingsworth house, about 1.9 miles west of, 40 feet east of junction of old and new roads, north side of road, in root of 24-inch cottonwood tree; nail.....	206.14
Four-mile post, about 300 feet east of, top of hill, on north side of road, in 20-inch fir tree; nail.....	274.21
From Darrington north along highway to McKutchens.	
Darrington, 4 miles north of, east of road, opposite bars, in 36-inch cedar tree; nail.....	478.61
Darrington, 5 miles north of, on west side of road at top of hill, in fir tree; nail.....	455.29
Darrington, 7.5 miles north of, 200 feet north of corduroy bridge over swamp, on east side of road, in 42-inch cedar tree; nail.....	397.77
Suiattle River, 0.25 mile south of mouth of, 8.5 miles north of Darrington, in ledge of granite and slate 15 feet above and 15 feet west of road, in cut of hill; copper bolt stamped "414 M. C.".....	415.813
Darrington, 14.5 miles north of, 10 feet west of road and south of west of island in Sauk River, in rocky bluff 10 feet high, 40 feet above river; copper bolt stamped "333 M. C.".....	335.358
Darrington, 18.5 miles north of, south edge of clearing, 200 feet northeast of barn, east of road, in cottonwood tree; nail.....	256.86
Sauk, 3.5 miles south of, 50 feet from northeast corner of Phillips's fence, 50 feet from slough, west of road, in 80-inch charred cedar tree; nail....	251.00
Sauk, 2.0 miles south of, north of gate of fork roads to east, about 1,000 feet northwest of bridge over small stream, in sandstone ledge 12 feet west of road; copper bolt stamped "246 M. C.".....	247.949
Skagit River, Sauk Ferry, about mean height of river.....	202.2
From McMurray east along highway and trail to Lake Cavanaugh, thence north via Day Lake to Lyman Ferry (part of line).	
Deer Creek trail, 5 miles from Lake Cavanaugh road, 3 feet south of southwest corner of reflectors, 4 feet north of trail; iron post stamped "1260 Wash 1909".....	1,260.590
T. 33 N., Rs. 6 and 7 E., quarter corner between secs. 12 and 7, crossing of range line and Deer Creek trail, in root of tree; copper temporary bench mark.....	1,294.19

Deer Creek trail, 100 feet west of junction of trail to Day Lake, 7.2 miles from Lake Cavanaugh road, 15 feet east of stream, 6 feet west of 8-foot cedar tree, in top of large boulder; aluminum tablet stamped "1147 Wash 1909".....	Feet. 1, 146. 497
Deer Creek trail, 0.2 mile north of, on trail to Day Lake, 43 paces east to corner of secs. 5, 6, 7, and 8, east side of trail, in root of tree blazed and marked with pencil "43 paces east to cor. secs. 5, 6, 7, and 8"; copper temporary bench mark.....	1, 471. 87
Tps. 33 and 34 N., R. 7 E., 60 rods east of corner of secs. 5, 6, 31, and 32, crossing of township line and trail from Deer Creek to Day Lake, east edge of trail, in 8-inch tree blazed and marked with pencil; copper temporary bench mark.....	1, 710. 38
Day Lake, east end of, fork of trail, in tree blazed and marked in pencil "Deer Creek, keep to right"; copper temporary bench mark.....	1, 627. 21
Day Lake, surface of water.....	1, 599. 55
Day Lake, north side of, about one-third of the distance from east to west end, 250 feet west of cabin, 15 feet west of small stream, in top of large boulder; aluminum tablet stamped "1616 Wash 1909".....	1, 615. 325
Day Lake, 1.8 miles northwest of, at summit of hill, 150 feet northwest of cabin, just west of 8-foot cedar tree, east edge of trail, in top of granite boulder; aluminum tablet stamped "2339 Wash 1909".....	2, 338. 314
Day Lake, 3.5 miles northwest of, 20 feet west of cabin, east edge of trail, in root of stump; copper temporary bench mark.....	1, 971. 64
Day Lake, 3.7 miles northwest of, 7.5 miles southeast of Lyman, 15 feet north of stream, 40-foot waterfall about 70 feet to east, east edge of trail, top of rock about 3 feet high; aluminum tablet stamped "2005 Wash 1909".....	2, 044. 959

SULTAN QUADRANGLE.

[Latitude 47° 30'-48°; longitude 121° 30'-122°.]

From point 2 miles southeast of Preston west along Northern Pacific Ry. to Grand Ridge coal mine.

Primary leveling in 1910 by D. S. Birkett.

Preston Lumber Co.'s upper mill, northwest corner of school yard (district 90), 70 feet north by 25 feet west of schoolhouse, in notch at base of 3½-foot cedar stump 8 feet high; copper nail, aluminum tag stamped "595".....	595. 23
Preston Lumber Co.'s upper mill (2 miles southeast of town of Preston) southeast corner of school yard, 60 feet south of schoolhouse, 5 feet west of school fence (district 90); iron post stamped "597 Wash".....	596. 479
Preston, 500 feet east of Northern Pacific Ry. station, east side of road crossing railroad track, 30 feet south of track, northwest corner of shipping shed for Preston Lumber Co.; iron post stamped "508 Wash".....	507. 717
High Point, 50 feet west of county road crossing, 50 feet south of railroad, 7 feet north of northeast corner of post office; iron post stamped "487 Wash".....	487. 103

At Index (on spur line from Peshastin).

Primary leveling in 1898 by H. K. Kallock.

Index, at station, 40 feet southwest of agent's window, 27 feet southwest of track; iron post stamped "532 T".....	532. 176
From Silvertown south along trail over divide and down Williamson Creek to Sultan River (part of spur line).	
T. 29 N., R. 9 E., north bank of Sultan River, 50 feet east of north end of bridge over river, 600 feet east of mouth of Williamson Creek, in bed rock; copper bolt stamped "1413".....	1, 414. 339

From Granite Falls south to Lake Roesiger.

Lake Roesiger, 100 feet east of Nesbeth barn, 150 feet east of trail, in boulder; copper bolt stamped "619"	Feet. 619. 930
Lake Roesiger, surface of water	568

SUMAS QUADRANGLE.

[Latitude 48° 45'-49°; longitude 122° 15'-122° 30'.]

From Delta south along Meridian road to Bellingham.

Primary leveling in 1905 by G. C. Jacobs.

T. 40 N., R. 3 E., sec. 19, 2 feet east of fence corner, in northwest angle of crossroads; iron post stamped "93 B"	93. 412
T. 40 N., R. 2 E., sec. 36, at southeast corner of Lamont place, 125 feet north of north end of bridge, in northwest angle of crossroads; iron post stamped "72 B"	73. 154
Laurel school yard, T. 39 N., R. 3 E., sec. 19, 250 feet north of crossroads, in northwest corner of school yard; iron post stamped "82 B"	82. 654
T. 38 N., R. 2 E., northeast corner of sec. 1, west of road; iron post stamped "187 B"	187. 821

From Bellingham north along Bellingham & Northern R. R. to Sumas.

Van Wyck, T. 38 N., R. 3 E., sec. 3, 50 feet north of station; iron post stamped "186 B"	186. 298
Wahl, northeast angle of road crossing; iron post stamped "251 B"	251. 685
Central, southwest angle of road crossing, 40 feet southwest of station; iron post stamped "133 B"	133. 900
Everson, 150 feet south of station, west of track, east of road; iron post stamped "83 B"	83. 750
Clearbrook, 150 feet southeast of station, at northeast angle of road crossing; iron post stamped "66 B"	66. 714
Sumas, 10 feet south of international boundary, west of Seattle & International Ry., at northeast corner of United States immigration building; iron post stamped "48 B"	48. 310
Sumas, 9.8 feet east of international boundary line monument, in granite boulder, triangulation station "Sumas;" bronze tablet stamped "202 B"	202. 646

From Hampton west along county road to Meridian road.

Lynden, in wall of Lynden Bank building, between large front window and main entrance, 4 feet above sidewalk; aluminum tablet stamped "95 B"	95. 046
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From Clearbrook west along county road to Meridian road.

Northwood, T. 40 N., R. 3 E., secs. 3 and 10, 15 feet north and 30 feet east of quarter-section corner, southeast angle of crossroads; iron post stamped "132 B"	132. 793
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From Bellingham east along Northern Pacific Ry. to Woodlawn.

Silver Beach, 25 feet north of track, 2 feet east of northeast corner of station; iron post stamped "313"	313. 476
Woodlawn, 40 feet north of entrance to Iverson place, 75 feet east of track, 100 feet east of edge of lake, 250 feet north of signboard; iron post stamped "319 B"	320. 019

From Deming west along highway to Goshen.

Nugent, 650 feet northeast of bridge, 53 feet southeast of entrance to Nugent Bridge saloon, in south angle of forks of road; iron post stamped "156 B"	156. 286
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TACOMA QUADRANGLE.

[Latitude 47°-47° 30'; longitude 122°-122° 30'.]

From Black River along Northern Pacific Ry. to Covington.

Precise leveling by U. S. Coast and Geodetic Survey.

Black River, opposite Northern Pacific Ry. station, 11.55 meters east of nearest Columbia & Puget Sound rail, 1.92 meters west of right of way fence; square hole in top of granite post, marked "U. S. \square B. M." (C. & G. S. "H").....	Feet. 20. 545
Black River, 0.25 kilometer south of, on sandstone abutment for approach to Northern Pacific Ry. bridge over Black River, on north end of bridge, on west side of track, 1.34 meters from nearest rail, in concrete abutment, 0.42 meter from south edge and 0.190 meter from west edge; copper bolt (C. & G. S. "I") marked "U. S. \square B. M."	34. 209
Kent, in Ed. Brotschi's yard on Railroad Avenue, 0.2 meter from west fence and 0.2 meter from south fence; bottom of square hole in top of granite post, marked "U. S. \square B. M." (C. & G. S. "J").....	40. 354
Kent, at southwest corner of Gowe Street and First or Front Street (as commonly known in town), 2.8 meters south of edge of Gowe Street pavement and 3.8 meters from corner of store building, 0.26 meter above ground, in head of northeast corner bolt holding cap of water hydrant; cut cross (C. & G. S. "K").....	42. 414
Kent, 2 kilometers south of, 0.8 kilometer north of Thomas at north end of Northern Pacific Ry. bridge over White River, west of track, in upper surface of northwest corner of concrete abutment, 0.1 meter from each edge and 2.22 meters from nearest rail; copper bolt (C. & G. S. "L") marked "U. S. \square B. M."	52. 838
Auburn, 73 meters north of small Northern Pacific Ry. station, in Mr. Gilmore's yard, about 20 meters northeast of his house, 2 meters west of fence inclosing his yard, 14.35 meters from nearest rail; bottom of square hole in top of granite post, marked "U. S. \square B. M." (C. & G. S. "M")..	74. 193
Auburn, in front of R. C. Kinleyside's hardware and furniture store, in cement sidewalk, 2.74 meters from its outer edge and 0.16 meter from building; brass plate (C. & G. S. "N").....	83. 737
Auburn, 0.75 kilometer east of, in top of concrete abutment for approach of Northern Pacific Ry. bridge over White River, 0.365 meter from east edge, 0.18 meter from south edge of abutment and 1.465 meters from nearest rail; bottom of hole 32 millimeters square cut in stone, lettered "U. S. \square B. M." (C. & G. S. "O").....	99. 468
Covington, 0.9 kilometer west of station, in west abutment of concrete approach to Northern Pacific Ry. bridge 2 over Jenkins Creek, 6 rails west of nearest switch stand, 0.3 meter from east and 0.2 meter from south edge of abutment, 1.5 meters south of nearest rail of track; brass plate (C. & G. S. "P").....	330. 764
Covington, 36 meters west of station of Northern Pacific Ry., 9 meters south of main-line track, 10 meters south of milepost 224, about in line of telegraph poles and in Northern Pacific right of way; bottom of square hole in top of granite post, marked "U. S. \square B. M." (C. & G. S. "Q").....	346. 315

From Tacoma southeast along Northern Pacific Ry. to Orting, thence northeast to Buckley.

Precise leveling in 1898 by H. S. Crowe and in 1913 by D. S. Birkett.

Tacoma, city hall building, on top of coping of cornerstone; cross.....	110. 240
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Tacoma, northwest corner of Seventh Street and Pacific Avenue, southeast corner of city hall building, 2 feet above sidewalk; aluminum tablet stamped "1913".....	Feet. 109.965
Prescott, in front of station; top of rail.....	8.9
Reservation platform, at road crossing; top of rail.....	12.5
Milepost 5, 270 feet east of, in top stone of stone culvert, 1 foot from east end of stone, 10.7 feet from center of south track; copper plug stamped "21 T".....	21.893
Puyallup, at Stewart and Meridian streets, northeast corner of building of J. P. Stewart & Sons, in fifth row of bricks above cornerstone; aluminum tablet stamped "49 T".....	48.712
Meeker Junction; top of rail.....	60.7
Alderton, 150 feet east of water tank, 23 feet north of center of wagon road, 36.6 feet from center of track, 4.7 feet from south corner of east-west fence; iron post stamped "89 T".....	89.136
Orting, in front of station; top of rail.....	192.0
Orting, 150 feet west of water tank, 34.2 feet from center of track on south side, 3 feet west of telegraph pole, 53 feet west of center line of Bridge Street; iron post stamped "198 T".....	197.974
South Prairie, in front of station; top of rail.....	428.4
South Prairie, 50.7 feet east of northeast corner of station, 2.3 feet west of telegraph pole, 19.1 feet from center of track; iron post stamped "430 T".....	429.706
Buckley, at River Avenue and Main Street, southwest corner of Collins & McNichol's butcher shop; aluminum tablet stamped "723 T".....	722.844
Buckley, in front of station; top of rail.....	723.7

From Tacoma southeast along Northern Pacific Ry. to Meeker Junction, thence north to Auburn.

Tacoma, at A and Thirteenth streets, opposite Puget Sound Traction, Light & Power Co.'s car barns, point midway in block, west side of street, top of trapdoor in sidewalk; painted square.....	64.54
Tacoma, 0.2 mile southwest of Union Station, intersection of north-south brick-paved street with Northern Pacific Ry. tracks, west side of street, top of granite curbstone; painted square.....	12.60
Tacoma, 2.1 miles southeast of, 300 feet northwest of engine room to Peterman Mill, west edge of Northern Pacific Ry. right of way, in base of telegraph pole; spike marked "U. S. B. M. No. 3".....	9.47
Tacoma, 3 miles southeast of, west end of Oregon-Washington R. R. & Navigation Co.'s steel bridge over Puyallup River, south side, top of concrete pier; aluminum tablet stamped "16 1913".....	16.036
Milepost 36, 400 feet southeast of, east side of Northern Pacific Ry. right of way, in base of brace to telegraph pole; spike marked "U. S. B. M. No. 5".....	20.66
Milepost 35, 1,100 feet southeast of, west edge of right of way, in base of telegraph pole; spike marked "U. S. B. M. No. 6".....	16.84
Milepost 34, opposite, on west side of Northern Pacific Ry. right of way, in base of telegraph pole; spike marked "U. S. B. M. No. 7".....	22.09
Milepost 33, 170 feet west of, south side of right of way, in base of telegraph pole; spike marked "U. S. B. M. No. 8".....	28.43
Puyallup, 2.4 miles west of, steel bridge over creek, east abutment, north end; aluminum tablet stamped "31 1913".....	31.175
Milepost 32, 210 feet east side of right of way, in base of telegraph pole; spike marked "U. S. B. M. No. 10".....	33.43
Milepost 31, 110 feet west of, south side of right of way, in base of telegraph pole; spike marked "U. S. B. M. No. 11".....	41.72
Milepost 30, 210 feet east of, south side of right of way, in base of telegraph pole; spike marked "U. S. B. M. No. 13".....	47.79

Meeker Junction, 700 feet west of, 14 feet south of track, northeast corner of water tank, on top of concrete pier; chiseled square.....	Feet. 60. 206
Meeker Junction, 0.7 mile northeast of, 0.5 mile southwest of Northern Pacific Ry. bridge over Puyallup River, north side of tracks, in concrete base of semaphore; chiseled square.....	63. 69
Summer, 0.4 southwest of, north end of Northern Pacific Ry. steel bridge over Puyallup River, in concrete abutment on east side; aluminum tablet stamped "69 1913".....	69. 830
Milepost 28, 1,000 feet northeast of, 30 feet west of tracks, in base of telegraph pole; spike marked "U. S. B. M. No. 17".....	65. 60
Milepost 27, 300 feet north of, on concrete base of semaphore; chiseled square.....	62. 12
Milepost 26, 30 feet north of, 30 feet west of tracks, in base of telegraph pole; spike marked "U. S. B. M. No. 19".....	56. 36
Milepost 25, west side of tracks, top of post; copper nail.....	82. 68
Stuck River steel bridge (Northern Pacific Ry.), 0.6 mile south of, 0.6 mile north of milepost 25, west side of track, on concrete base of semaphore; chiseled square.....	91. 01
Auburn, 2.9 miles south of, south end of Northern Pacific Ry. bridge over Stuck River, on east side, in concrete abutment; aluminum tablet stamped "100 1913".....	100. 263
Auburn, 2.2 miles south of, 260 feet south of milepost 23, west side of Northern Pacific Ry. tracks, on concrete base of semaphore; chiseled square.....	103. 73
Milepost 22, 12 feet north of, south end of emergency rail stand, on top; copper nail.....	99. 25
Auburn, 0.3 mile south of, nearly due west of main line of Northern Pacific Ry. steel bridge over Green River, east side of double track, on concrete base of semaphore; chiseled square.....	84. 27
Auburn, 73 meters north of small Northern Pacific Ry. station, in Gilmore's yard, about 20 meters northeast of his house, 2 meters west of fence inclosing his yard, 14.35 meters from nearest rail; bottom of square hole in top of granite post marked "U. S. \square B. M." (C. & G. S. b. m. M).....	74. 191
From Meeker Junction southeast along Northern Pacific Ry. to Orting, thence northeast along same road to South Prairie.	

Precise leveling in 1913 by D. S. Birkett.

Milepost 33, 0.3 mile east of, west side of right of way, in base of telegraph pole; spike marked "U. S. B. M. No. 26".....	65. 07
Milepost 32, 0.1 mile east of, north side of right of way, in base of brace to telegraph pole; marked "U. S. B. M. No. 27".....	77. 10
Milepost 31, 255 feet southeast of, in base of mail crane; copper nail marked "U. S. B. M. No. 28".....	89. 57
Alderton, 150 feet east of water tank, 23 feet north of center of wagon road, 36.6 feet from center of track, 4.7 feet from south corner of east-west fence; iron post stamped "89 T".....	89. 136
Milepost 30, 220 feet south of, east side of right of way, in base of telegraph pole; spike marked "U. S. B. M. No. 30".....	106. 57
McMillin, 620 feet south of milepost 29, east side of right of way, in base of telegraph pole; spike marked "U. S. B. M. No. 31".....	122. 88
McMillin, 1 mile southeast of, south end of Northern Pacific Ry. steel bridge over South Fork of Puyallup River, on east side in concrete abutment; aluminum tablet stamped "131 1913".....	130. 550
Milepost 27, 390 feet south of, east side of right of way, in base of telegraph pole; spike marked "U. S. B. M. No. 33".....	151. 42

Milepost 26, 50 feet southeast of, east side of track, in base of telegraph pole; spike marked "U. S. B. M. No. 34"	Feet. 176. 38
Orting, Boatman store building, middle section of, on concrete sill; chiseled square	195. 31
Milepost 24, 400 feet west of, west end of wooden trestle 241, in foundation; spike marked "U. S. B. M. No. 13"	225. 18
Milepost 23, 60 feet east of, west end of trestle 236, in top of wooden foundation; copper nail marked "U. S. B. M. No. 38"	272. 46
Crocker, 0.4 mile northeast of, east end of Northern Pacific Ry. steel bridge over Puyallup River, north side, in concrete abutment; chiseled square marked "U. □ S."	311. 10
Milepost 21, in top of; copper nail marked "U. S. B. M. No. 40"	319. 08
Milepost 20, 220 feet north of, west side of right of way, in base of brace to telegraph pole; spike marked "U. S. B. M. No. 41"	344. 52
Milepost 19, in base of; spike marked "U. S. B. M. No. 42"	393. 90
South Prairie, intersection of Emery and First streets, 150 feet south of tracks, across street from Knights of Pythias hall, in concrete sidewalk; chiseled square	428. 68

From point 5 miles southwest of Issaquah along wagon road to Renton, thence west along Northern Pacific Ry. to Black River Junction.

Primary leveling in 1910 by D. S. Birkett and E. M. Bandli.

Issaquah, 6 miles southwest of, 6.5 miles northeast of Renton, point where road forks, one branch leading to "Cedar Mountain" and the other to Issaquah, 0.5 mile east of Michael Walsh's house, 100 feet east of road intersection, 25 feet from each road and in forks, at base of 2-foot cedar stump 8 feet high, copper nail in notch; aluminum tag stamped "336"	335. 99
T. 23 N., R. 5 E., in NE. $\frac{1}{4}$ sec. 12, 5.4 miles northeast of Renton city hall, in southwest corner of May Creek school yard, 40 feet south by 40 feet west of southwest corner of schoolhouse, 60 feet north of county road; iron post stamped "328 Wash"	328. 054
Renton, 4.8 miles east of, on Issaquah road, 30 feet west of T in roads where Issaquah road leads north to May Creek schoolhouse 1 mile distant; projection on top of 8 by 5 by 8 foot granite boulder marked with red paint "U. S. 442 B. M."	441. 71
Renton, 2.5 miles east of, northeast corner of sec. 16, T. 23 N., R. 5 E., south side of road, in line with high-power transmission line, 200 feet southwest of slaughterhouse; iron post stamped "401 Wash"	400. 165
T. 23 N., R. 5 E., southwest corner of sec. 9, 1.5 miles east of Renton, point where road joins Issaquah road, 175 feet southwest of section corner, 20 feet south of road, at base of 2-foot cedar stump 4 feet high; copper nail in notch, aluminum tag stamped "268"	267. 19
Renton, 0.7 mile east of, at T in roads where road turns south to Elliot, north side of road, 40 feet west of signboard "Seattle 14.5 miles; Snoqualmie Falls 26 miles," at base of 5-foot cedar stump 10 feet high; copper nail in notch, aluminum tag stamped "44"	43. 57
Renton, city fire hall, concrete approach to hose-cart stalls at south end, 15 feet west of sidewalk, 1 foot east of building and 0.5 foot from south edge of approach; aluminum tablet stamped "40 Wash"	39. 546
Black River, opposite Northern Pacific Ry. station, 11.6 meters east of nearest Columbia & Puget Sound R. R. rail, 1.92 meters west of right of way fence; bottom of square hole cut in top of granite post; marked "U. S. □ B. M." (C. & G. S. b. m. "H")	20. 545

From point 1.4 miles west of Hobart along Pacific Coast R. R. to Maple Valley, thence south along same railroad to point near Summit.

Maple Valley, 300 feet east of Columbia & Puget Sound R. R. station, 45 feet north of Black Diamond branch of same railroad, 30 feet east of county road, 5 feet south of a saloon; iron post stamped "343 Wash".....	Feet. 343.125
Wilderness (2 miles east of Maple Valley), 60 feet east of station platform, 50 feet south of railroad, just south of road past station; iron post stamped "475 Wash".....	475.135
Summit (4 miles southeast of Maple Valley), 20 feet south of old station platform, 45 feet west of railroad, near fence, 16 feet south of road crossing railroad; iron post stamped "565 Wash".....	565.180

From Orting south along logging railroad to Kapowsin.

NOTE.—The following bench marks were established by E. M. Bandli in 1910 in connection with leveling in the Eatonville and Mount Rainier quadrangles. The work was not done in cooperation with the State.

Orting, 150 feet west of water tank, 34.2 feet from track on south side, 3 feet west of telegraph pole, 53 feet west of Bridge Street; iron post stamped "198 T".....	198.088
Orting, 2.5 miles southeast of, about 20 feet east of track, 5 feet south by 1 foot west of northwest corner of fence at private road crossing; iron post stamped "281".....	281.303
Orting, 5.9 miles southeast of, 40 feet west of Northern Pacific Ry. track, 2 feet east of fence, in front of Gipple's house, 10 feet south of gate to house; iron post stamped "420".....	419.699
Orting, 7.9 miles southeast of, 40 feet south of railroad, in base of 5-foot stump painted "544.7 B. M."; copper nail.....	544.74
Tps. 17 and 18 N., R. 5 E., 4 feet west of corner of secs. 5 and 32., 8.7 miles southeast of Orting, 0.5 mile west of Electron, 9 feet south of road, 20 feet east of railroad; iron post stamped "583".....	582.858

From Tacoma south along Northern Pacific Ry. to point 2.1 miles south of Lakeview (leveled twice).

Primary leveling in 1912-13 by E. M. Bandli.

Tacoma, at intersection of Twentieth and D streets and Jefferson Avenue, 1 mile from city hall, south of east side of Jefferson Avenue and opposite the Laurel rooming house (No. 1942), in bottom of telephone pole; copper nail marked "112.6".....	112.65
Tacoma, Center Street wagon bridge over Northern Pacific Ry. tracks, 6 feet north of tracks, southwest corner of foundation of bridge, in wooden pile; copper nail marked "214.0".....	213.98
South Tacoma, 40 feet north of road crossing, on Northern Pacific Ry. track, in top of small stump; copper nail marked "249.9".....	249.92
South Tacoma, first road crossing north of, at corner of station, 30 feet east of track, in telegraph pole; copper nail marked "253.5".....	253.65
South Tacoma, 66 feet south of Northern Pacific Ry. bridge crossing Lake Street car track, 90 feet north of road crossing, 15 feet east of track, in top of southwest concrete pier of bridge; aluminum tablet stamped "251".....	251.007
Tacoma, 7.3 miles south of, at northeast corner of auto race track, 40 feet east of railroad track, at road crossing, north of road, in telegraph pole; copper nail marked "275.7".....	275.68
Tacoma, 7.6 miles south of, at road crossing near Auto Club grandstand, 10 feet west of track, 4 feet south of railroad signpost; iron post stamped "Prim. Trav. Sta. No. 1, 272, 1912".....	272.484

Lakeview, 1,000 feet south of station, 15 feet north of first road crossing south of station, between arms of Y of Northern Pacific tracks, 6 feet southeast of railroad signpost, 30 feet northwest of main line of railroad; iron post stamped "Prim. Trav. Sta. No. 2, 275, Wash., 1912".....	Feet. 275.270
Lakeview, 1.3 miles south of, 30 feet east of track at road crossing, in telegraph pole; copper nail marked "296.1".....	296.33
Lakeview, 2.1 miles south of, at private-road crossing, 30 feet west of track, 30 feet south of road, in telegraph pole; copper nail marked "299.1"....	299.36

TAUNTON QUADRANGLE (in Othello 30' quadrangle).

[Latitude 46° 45'-47°; longitude 119° 15'-119° 30']

From east border west along Chicago, Milwaukee & St. Paul Ry. to west border of quadrangle, thence south along highways to southwest corner of quadrangle.

Leveling in 1916 by D. S. Birkett.

Anson, 0.6 mile east of, north side of track, on concrete base of semaphore; chiseled square, painted "U. S. 928 B. M.".....	927.81
Anson; top of nearest rail opposite signboard.....	924.4
Anson, at west end of siding, south side of track, on concrete base of semaphore; chiseled square, painted "U. S. 923 B. M.".....	923.34
Anson, 1.3 miles west of, north side of track, north side of concrete base of semaphore, in vertical face; bronze tablet stamped "898 Wash. 1916"...	897.579
Taunton, 1.7 miles east of, south side of track, on concrete base of semaphore; chiseled square, painted "U. S. 887 B. M.".....	887.12
Taunton, east end of siding, south side of track, on concrete base of semaphore; chiseled square, painted "U. S. 863 B. M.".....	862.77
Taunton, 0.3 mile west of, T. 15 N., R. 28 E., northeast quarter of sec. 7, west end of siding, north side of track, north side of concrete base of semaphore, in vertical face; bronze tablet stamped "849 Wash. 1916".....	848.720
Taunton, 1.7 miles west of, north side of track, on concrete base of semaphore; chiseled square, painted "U. S. 821 B. M.".....	820.36
Corfu, 2.7 miles east of, north side of track, north side of concrete base of semaphore, in vertical face; aluminum tablet stamped "797 Wash. 1916"....	797.132
Corfu, 2 miles east of, south side of track, on concrete base of semaphore; chiseled square painted "U. S. 784 B. M.".....	783.70
Corfu, 0.6 mile east of, east end of siding, north side of track, on concrete base of semaphore; chiseled square painted "U. S. 757 B. M.".....	757.26
Corfu, 1,260 feet east of depot, north side of track, west side of road; iron post stamped "750 Wash. 1916".....	749.578
Corfu, Chicago, Milwaukee & St. Paul Ry. depot; top of nearest rail opposite semaphore by operator's window.....	744.9
Corfu, water tank, northwest corner of concrete base of feed pipe casing; chiseled square painted "U. S. 743 B. M.".....	742.31
Corfu, 1.5 miles west of, north side of track, on concrete base of semaphore; chiseled square painted "U. S. 716 B. M.".....	715.97
Corfu, 1.2 miles southwest of, in horseshoe bend of road, southeast side of road, top fence post; copper nail painted "U. S. 1314 B. M.".....	1,314.30
Summit Saddle Mountain, pass from Corfu to Wahluke, T. 15 N., R. 27 E., sec. 7, 70 feet east of road; iron post stamped "1981 Wash. 1916".....	1,981.200
Summit Saddle Mountain, 0.4 mile southwest of, east side of road, guard-rail, top of post; copper nail painted "U. S. 1839 B. M.".....	1,839.20
T. 15 N., R. 27 E., near quarter corner, east side of sec. 18, 200 feet northwest of old house, east side of road, on basalt boulder; point in circle of paint, painted "U. S. 1319 B. M.".....	1,318.70

T. 15 N., R. 27 E., southwest corner of sec. 19, on top of corner stone in middle of road; chiseled square, painted "U. S. 973 B. M.".....	Feet. 972. 39
T. 15 N., R. 26 E., northeast corner of sec. 36, in base of very large corner fence post; railroad spike, painted "U. S. 777 B. M.".....	777. 07

In northeast corner of quadrangle.

T. 18 N., R. 28 E., southeast corner of sec. 35; iron post stamped "1080 Wash".....	1, 080. 011
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TRINIDAD QUADRANGLE (INCLUDES MALAGA 15' QUADRANGLE).

[Latitude 47°-47° 30'; longitude 120°-120° 30'.]

From point near southwest corner of T. 18 N., R. 20 E., north along highway toward Malaga.

Primary leveling in 1903 by R. A. Farmer and in 1909 by C. H. Semper.

Ellensburg, 12.7 miles northeast of, at crossroads, at northwest corner of R. B. Gage ranch; iron post stamped "2310".....	2, 309. 850
Ellensburg, 16 miles northeast of, 3.2 miles north of R. B. Gage ranch house, 15 feet east of road, opposite wire fence corner; iron post stamped "3173".....	3, 172. 595
Ellensburg, 19 miles northeast of, 0.4 mile north of first summit of mountain, 10 feet east of wire fence, 10 feet west of road; iron post stamped "4770".....	4, 770. 255
Ellensburg, 22.3 miles northeast of, on top of mountain, 80 feet west of wire fence, 30 feet east of road; iron post stamped "5134".....	5, 133. 874
Ellensburg, 23.6 miles northeast of, at summit of mountain, 10 feet west of road, in root of pine tree; spike marked "U. S. B. M. 5373" (tree 5 feet south of b. m. bears sign "Cable Ferry 13 miles").....	5, 372. 80
Summit, 2.3 miles north of, in small grass draw, 30 feet west of road, 45 feet south of small clump of poplar brush; iron post stamped "4789".....	4, 788. 605
Summit, 3.3 miles north of, on east side of road, in rocky clearing; top of rock, marked "U. S. B. M. 4213".....	4, 213. 20
Top of loose monument, probably triangulation station.....	4, 177
Summit, 4.6 miles north of, in canyon, at foot of steep grade (cut bank), south margin of road; iron post stamped "3443".....	3, 442. 697
Summit, 5.6 miles north of, at foot of mountain where grain fields commence, center of road, in root of large pine stump; spike marked "U. S. B. M. 2953".....	2, 953. 54

From milepost 1630 east along Northern Pacific Ry. to Trinidad.

Trinidad, 100 feet east of station; iron post stamped "958 T".....	958. 484
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TROUTDALE QUADRANGLE.

[Latitude 45° 30'-46°; longitude 122°-122° 30'.]

From Ariel east along highways to point east of Yale.

Primary leveling in 1915 by L. F. Biggs.

Ariel, 0.15 mile west of, on north edge of road and west bank of creek, in root of 33-inch maple tree; copper nail scribed "U. S. 91".....	90. 746
Ariel, 125 feet east of post office, at south edge of road, set in rock, bronze tablet stamped "105 5 1915".....	105. 079
Ariel, 1.3 miles east of, on south edge of road, in root of 18-inch fir tree; copper nail scribed "U. S. 191".....	191. 313
Ariel, 2.3 miles east of, at east end of bridge over Rock Creek, on north edge of road, on boulder; chiseled circle marked "U. S. 244".....	244. 050

Ariel, 3.3 miles east of, 100 feet east of creek on north edge of road, at rock point, set in rock; bronze tablet stamped "309 6 1915"	Feet. 308. 772
Ariel, 4.1 miles east of, 3.9 miles west of Yale, on north edge of road, on rock ledge; chiseled circle marked "U. S. 335"	334. 866
Yale, 2.6 miles southwest of, on west edge of road, in root of 50-inch fir tree; copper nail scribed "U. S. 384"	384. 305
Yale, 1.2 miles southwest of, on east edge of road, 100 feet north of road forks, on west bank of Spider Creek, on boulder; chiseled square marked "U. S. 247"	246. 891
Yale, 0.7 mile west of, on north edge of road, 20 feet west of orchard gate, in root of 32-inch crooked maple tree; copper nail scribed "U. S. 433"	432. 687
Yale, 0.3 mile southwest of, at schoolhouse, in south wall of foundation, directly under flagpole; bronze tablet stamped "446 7 1915"	445. 766

UMATILLA QUADRANGLE.

[Latitude 45° 30'-46°; longitude 119°-119° 30'.]

From Cold Springs, Oreg., across Columbia River north to sec. 26, T. 6 N., R. 29 E., thence west to Irrigon triangulation station, T. 6 N., R. 26 E.

Primary leveling in 1907 by T. J. McClain.

T. 5 N., R. 29 E., near quarter corner of secs. 2 and 11, 0.25 mile east of Mottinger ranch, in road forks at mouth of canyon; iron post stamped "329"	330. 048
T. 6 N., R. 29 E., northwest part of sec. 26, 2.4 miles northwest of Mottinger ranch, on west side of road; iron post stamped "869"	869. 908
T. 6 N., R. 29 E., near quarter corner secs. 29 and 30, 6.6 miles northwest of Mottinger ranch, east side of road to Siding; iron post stamped "859"	859. 522
Expansion triangulation station, 3 miles northeast of Umatilla, T. 6 N., R. 28 E., center of sec. 33, in rock; tablet stamped "1016"	1, 016. 802
T. 6 N., R. 28 E., 2.5 miles northeast of Plymouth, 0.85 mile west of road; iron post stamped "589"	589. 952
T. 6 N., R. 27 E., corner of secs. 26, 27, 34, and 35, 3.5 miles northwest of Plymouth, 20 feet east of Umatilla-Prosser road; iron post stamped "570"	570. 542
Kings ranch, 4 miles northwest of, 20 feet west of old wood road; iron post stamped "608"	608. 560

VAN ZANDT QUADRANGLE.

[Latitude 48° 45'-49°; longitude 122°-122° 15'.]

From Sumas southeast along Bellingham & Northern R. R. to Maple Falls, thence by highway northwest through Lemolo to Columbia.

Primary leveling in 1898 by W. S. Wheeler.

Lamberton, at road crossing, northeast of station; iron post stamped "43 B"	43. 173
Columbia, 150 feet southeast of station; iron post stamped "546 B"	546. 480
Kendall, 250 feet east of station, 200 feet north of track at road crossing, 40 feet west of post office; iron post stamped "446 B"	446. 680
Maple Falls, in yard 120 feet northeast of northeast corner of schoolhouse; iron post stamped "665 B"	665. 301
Silver Lake, 300 feet east of road forks, 3 feet north of gate to Gerdrum house; iron post stamped "818 B"	818. 496
Warner schoolhouse, 1,650 feet west of, 2 feet west of fence corner, 1 foot north of fence, 200 feet west of trail to Lemolo post office; iron post stamped "547 B"	547. 107

From south border of quadrangle north along Northern Pacific Ry. to Deming, thence northeast along highways to Kendall.

Van Zandt, at southeast corner of schoolhouse yard; iron post stamped "239 B"	Feet. 239. 182
Deming, 200 feet west of Deming livery stable, 500 feet west of station, north of road and track, at southeast corner of schoolhouse yard; iron post stamped "202 B"	202. 686
Welcome schoolhouse, 2 miles north of, 1 foot west of fence, east side of road, 10 feet south of blazed cottonwood tree, T. 39 N., R. 5 E., secs. 15 and 22, on section line; iron post stamped "332 B"	332. 447

WALLA WALLA QUADRANGLE.

[Latitude 46°-46° 30'; longitude 118°-118° 30'.]

From Whitman east and northeast along Oregon-Washington R. R. & Navigation Co. and Northern Pacific Ry. tracks to near Waitsburg, thence west along Oregon-Washington R. R. & Navigation Co. track and highways to point near Lamar.

Primary leveling in 1915 by D. S. Birkett.

Whitman, 600 feet west of signboard, 400 feet west of milepost 24, telegraph pole; spike marked "U. S. 591 B. M."	590. 54
Whitman, opposite signboard, top of rail	592. 3
Whitman, 0.44 mile east of, 200 feet north of Oregon-Washington R. R. & Navigation Co. track, north side of concrete culvert over irrigation ditch, sloping surface; bronze tablet stamped "601 Wash. 1915"	600. 810
Whitman, 1.14 miles east of, milepost 25; spike marked "U. S. 620 B. M."	620. 16
Walla Walla, 5.09 miles west of Oregon-Washington R. R. & Navigation Co. station, milepost 26; spike marked "U. S. 663 B. M."	662. 85
Walla Walla, 4.08 miles west of Oregon-Washington R. R. & Navigation Co. station, milepost 27; spike marked "U. S. 702 B. M."	701. 84
Walla Walla, 3.15 miles west of, 200 feet west of milepost 28, telegraph pole; spike marked "U. S. 749 B. M."	748. 93
Blalock, 380 feet west of crossing of Oregon-Washington R. R. & Navigation Co. and Walla Walla Valley Traction Ry. Co. track, east entrance to cellar of packing house, on upper flat surface of south concrete retaining wall to cellar entrance, 20 feet from building; bronze tablet stamped "778 Wash. 1915"	778. 306
Blalock fruit farm, top of rail at intersection point of Oregon-Washington R. R. & Navigation Co. and Walla Walla Valley Traction Ry. Co.	780. 7
Blalock, 0.35 mile east of, milepost 29; spike marked "U. S. 802 B. M." ..	801. 90
Walla Walla, 1.10 miles west of, milepost 30; spike marked "U. S. 864 B. M."	863. 70
Walla Walla (Oregon-Washington R. R. & Navigation Co.) station, opposite semaphore; top of rail	906. 5
Walla Walla, in northwest corner of county courthouse yard 31 feet south of the south margin of Main Street, 4 feet east of the east margin of Sixth Street; iron post stamped "936 Wash. 1915" (p. b. m. 9)	935. 836
Walla Walla, Federal Building, north side entrance, concrete coping about 5 inches above ground, alongside of steps, bronze tablet stamped "952 Wash. 1915" (p. b. m. 10)	951. 605
Walla Walla, about 1.07 miles east of Northern Pacific Ry. station, 300 feet west of milepost 65, on Dayton branch, telegraph pole; spike marked "U. S. 1013 B. M."	1, 013. 47
Mill Creek Junction, opposite switch stand; top of rail	1, 055. 9
Walla Walla, 2.16 miles northeast of, 250 feet east of milepost 66, opposite yard limit sign, telephone pole; spike marked "U. S. 1096 B. M."	1, 095. 79

Walla Walla, 3.12 miles east of, 50 feet north of milepost 57, north of track, brace to telegraph pole; spike marked "U. S. 1163 B. M."	Feet. 1, 162. 99
Riffle, 1.55 miles west of, 250 feet west of milepost 58, telegraph pole; spike marked "U. S. 1205 B. M."	1, 204. 85
Riffle, 0.20 mile west of, east side of road crossing, 50 feet south of track, corner of right of way fence, iron post stamped "1230 Wash. 1915" (p. b. m. 11)	1, 229. 729
Riffle, opposite signboard; top of rail	1, 240. 1
Riffle, 0.5 mile east of, 70 feet east of milepost 69, telephone pole, south side of track; spike marked "U. S. 1263 B. M."	1, 262. 64
Sapolet, 0.2 mile west of, 20 feet west of milepost 70, north side of track, telegraph pole; spike marked "U. S. 1265 B. M."	1, 264. 92
Sapolet, opposite signboard; top of rail	1, 264. 0
Sapolet, 0.71 mile east of, 100 feet west of milepost 71, north side of track, telegraph pole; brace to spike marked "U. S. 1221 B. M."	1, 281. 30
Buroker, opposite signboard; top of rail	1, 308. 9
Dixie, 3.36 miles southwest of, 0.5 mile northeast of Buroker siding, 200 feet north of track, Charles Kibler place, concrete foundation of machinery storehouse; bronze tablet stamped "1325 Wash. 1915" (p. b. m. 12)	1, 325. 447
Spring Creek, opposite signboard; top of nearest rail	1, 346. 2
Dixie, 2.02 miles southwest of, 120 feet south of milepost 73, west side of track, telephone pole; spike marked "U. S. 1427 B. M."	1, 426. 78
Gilliam, opposite signboard; top of rail	1, 496. 5
Dixie, 1 mile southwest of, 40 feet south of milepost 74, west side of track, telephone pole; spike marked "U. S. 1510 B. M."	1, 509. 94
Dixie, 100 feet southwest of station, west edge of right of way, in line of right-of-way fence, 60 feet west of track; iron post stamped "1587 Wash. 1915"	1, 586. 869
Eastman, 0.16 mile south of, 825 feet north of milepost 76, 100 feet north of point where road crosses track west side of track, telegraph pole; spike marked "U. S. 1671 B. M."	1, 670. 71
Eastman, opposite signboard, top of rail	1, 681. 8
Eastman, 1.08 miles north of, 400 feet northeast of milepost 77, on back side of north post of emergency rail stand; spike marked "U. S. 1741 B. M." ..	1, 741. 53
Milepost 78, 200 feet west of, south side of track, telegraph pole; spike marked "U. S. 1792 B. M."	1, 792. 12
Milepost 79, 420 feet north of, north side of track, back side of north post of emergency rail stand; spike marked "U. S. 1870 B. M."	1, 869. 77
Minnick, 560 feet south of signboard, road crossing east side of track, near right of way fence, south side of road; iron post stamped "1914 Wash. 1915" (p. b. m. 14)	1, 913. 777
Minnick, opposite signboard; top of rail	1, 915. 4
Minnick, 0.3 mile north of signboard, 480 feet south of milepost 80, telegraph pole; spike marked "U. S. 1898 B. M."	1, 898. 35
Minnick, 1.19 miles north of, milepost 81, 230 feet south of, west side of track, telegraph pole; spike marked "U. S. 1827 B. M."	1, 827. 08
Minnick, 2.23 miles north of, 100 feet south of milepost 82, west side of track, telephone pole; spike marked "U. S. 1751 B. M."	1, 750. 62
Milepost 83, 150 feet south of, corner fence post, right of way fence, 50 feet west of track; spike marked "U. S. 1662 B. M."	1, 662. 42
Trestle 23, over Copper Creek, midway over watercourse; top of highest rail ..	1, 625. 4
Milepost 84, 200 feet west of, telegraph pole; spike marked "U. S. 1591 B. M."	1, 591. 07
Copper, opposite signboard; top of rail	1, 520. 2

Copper, 0.21 mile north of, railroad crossing, west edge of right of way, north side of road; iron post stamped "1503 Wash 1915" (p. b. m. 15)...	Feet. 1,502.602
Milepost 86, 150 feet south of, west side of track, telegraph pole; spike marked "U. S. 1429 B. M."	1,429.09
Waitsburg, 0.9 mile south of, opposite milepost 87, emergency rail stand, back side of post; spike scribed "U. S. 1347 B. M."	1,347.12
Waitsburg, 0.2 mile south of, 250 feet north of milepost 88, power pole; spike marked "U. S. 1287 B. M."	1,287.34
Waitsburg, Northern Pacific Ry. station, in front of semaphore top of rail..	1,281.3
Waitsburg, northeast corner of town, 0.40 mile east of Oregon-Washington R. R. & Navigation Co. station, railroad crossing, east side of road, south edge of right of way, 70 feet north of mill race, 270 feet west of section tool house; iron post stamped "1280 Wash. 1915" (p. b. m. 16)	1,280.267
Waitsburg, 600 feet west of Oregon-Washington R. R. & Navigation Co. station, 60 feet north of main track, 20 feet south of warehouse, 5 foot concrete pedestal for motor; bronze tablet stamped "1278 Wash. 1915" (p. b. m. 17)	1,278.161
Milepost 3, opposite; top of nearest rail	1,263.4
Waitsburg, 1.56 miles west of, north side of Oregon-Washington R. R. & Navigation Co. track brace to milepost 2; spike marked "U. S. 1231 B. M."	1,230.98
Waitsburg, 2.30 miles west of, 1.1 miles east of Bolles Junction road crossing, north edge of, right of way; iron post stamped "1224 Wash. 1915" (p. b. m. 18)	1,224.354
Milepost 1, opposite; top of nearest rail	1,201.2
Bolles Junction, opposite semaphore, main track; top of nearest rail	1,166.1
Bolles Junction, 0.47 mile west of, 360 feet west of Oregon-Washington R. R. & Navigation Co. water tank, south side of track, brace to milepost 71, spike marked "U. S. 1150 B. M."	1,150.21
Bolles Junction, 1.5 miles west of, south side of track, back side of milepost 70; spike marked "U. S. 1113 B. M."	1,112.98
Bolles Junction, 2.48 miles west of, south side of track, back side of milepost 69; spike marked "U. S. 1093 B. M."	1,093.13
Prescott, 1.35 miles east of, 180 feet east of milepost 68, back side of telephone pole; spike marked "U. S. 1070 N. M."	1,069.34
Prescott, 0.3 mile east of Oregon-Washington R. R. & Navigation Co. station, 200 feet east of milepost 67, north side of track, telephone pole; spike scribed "U. S. 1047 B. M."	1,046.46
Prescott, opposite semaphore; top of nearest rail	1,040.7
Prescott, 620 feet west of Oregon-Washington R. R. & Navigation Co. station, 160 feet north of main track, northeast corner of section foreman house yard; iron post stamped "1038 Wash. 1915" (p. b. m. 19)	1,038.136
Prescott, 0.74 mile west of, 400 feet east of milepost 66, telegraph pole; spike scribed "U. S. 1050 B. M."	1,049.73
Prescott, 1.4 miles southwest of, 0.7 mile southwest from milepost 66, at point where telegraph line crosses Oregon-Washington R. R. & Navigation Co. track, telegraph pole; spike marked "U. S. 1081 B. M."	1,080.74
Wooden truss bridge over Touchet River, in middle of, at north side of, marked "1008"	1,007.86
Prescott, 1 mile west of high school, T. 10 N., R. 36, E., in SW. $\frac{1}{4}$ sec. 32, T road south, telephone pole; spike scribed "U. S. 1031 B. M."	1,030.53
Prescott, 2 miles west of, and 0.5 mile north of high school, T. 10 N., R. 36 E., middle of sec. 31, telephone pole; spike scribed "U. S. 1033 B. M." ..	1,032.91

Prescott, 30 miles west of, T. 10 N., R. 35 E., middle of sec. 36, on Lamar road, north side of, opposite lane to south: iron post stamped "1012 Wash. 1915" (p. b. m. 20).....	Feet. 1,012.098
T. 10 N., R. 35 E., in the southeast corner of sec. 35, 200 feet west of turn in road, telephone pole; spike scribed "U. S. 970 B. M.".....	970.02
Pettyjohn Church, cross roads in front of, T. 10 N., R. 35 E., in the southwest corner of sec. 35, corner fence post; spike marked "U. S. 953 B. M.".....	952.72
Pettyjohn Church, 1.01 miles west of, T. 10 N., R. 35 E., on line between sections 33 and 34, private lane to north, southeast corner; iron post stamped "966 Wash. 1915" (p. b. m. 21).....	965.235
T. 10 N., R. 35 E., southeast corner of section 33, telephone pole; spike marked "U. S. 901 B. M.".....	901.12
Lamar, 2.5 miles east of, H. P. Wheeler ranch, concrete watering trough, in middle of top edge, at west end of.....	879.58
Lamar, 2.4 miles east of, 0.15 mile west of H. P. Wheeler ranch house, foot of small hill, north side of road, telephone pole, on back side; spike scribed "U. S. 876 B. M.".....	875.84
Lamar, 0.91 mile east of Northern Pacific Ry. steel bridge over Touchet River, west end of north side of, on concrete abutment; bronze tablet stamped "892 Wash. 1915".....	891.554
From Bolles Junction northeast and north along Oregon-Washington R. R. & Navigation Co. track to Starbuck. (Unadjusted line.)	
Bolles Junction, 1.1 miles northeast of, 450 feet northeast of milepost 73, brace to telegraph pole; spike scribed "U. S. 1297 B. M.".....	1,296.39
Menoken, 1.2 miles southwest of, 0.25 mile northeast of milepost 74, on east side of track, telegraph pole; spike scribed "U. S. 1364 B. M.".....	1,363.49
Menoken, opposite signboard; top of nearest rail.....	1,299.3
Menoken, 170 feet north of signboard, at road crossing, west edge of right of way, north side of road; iron post stamped "1296 Wash. 1915" (p. b. m. 28).....	1,295.912
Milepost 76, brace to, east side of track; spike scribed "U. S. 1325 B. M.".....	1,324.80
Milepost 77, 350 feet north of, brace to telegraph pole east side of track; spike scribed "U. S. 1405 B. M.".....	1,405.03
Menoken, 3.03 miles north of, 0.25 mile south of McKay schoolhouse, at point where road crosses railroad, 50 feet north of road, 50 feet east of railroad; iron post stamped "1523 Wash. 1915" (p. b. m. 29).....	1,523.247
Milepost 79, brace to, east side of track; spike scribed "U. S. 1570 B. M.".....	1,569.67
Milepost 80, 875 feet northeast of, east side of track, telegraph pole; spike scribed "U. S. 1667 B. M.".....	1,666.61
Milepost 81, 350 feet northeast of, east side of track, on back side of emergency rail stand; spike scribed "U. S. 1737 B. M.".....	1,737.06
Milepost 82, east side of track; spike scribed "U. S. 1819 B. M.".....	1,818.61
Alto, 770 feet south of signboard, 70 feet east of track, south side of road crossing, 3 feet north of milepost 83; iron post stamped "1900 Wash. 1915" (p. b. m. 30).....	1,899.972
Alto, opposite signboard; top of rail.....	1,906.3
Milepost 84, 150 feet north of, telegraph pole; spike scribed "U. S. 1805 B. M.".....	1,805.36
Milepost 85, 180 feet north of, back side of emergency rail stand; spike scribed "U. S. 1655 B. M.".....	1,654.77
Milepost 86, 175 feet south of, brace to telegraph pole: spike scribed "U. S. 1515 B. M.".....	1,515.18

Milepost 87, 350 feet north of, back side of emergency rail stand; spike scribed "U. S. 1350 B. M.".....	Feet. 1,350.06
Milepost 88, east side of track; spike scribed "U. S. 1206 B. M.".....	1,205.85
Relief, 630 feet south of, 75 feet south of road crossing, west edge of Oregon-Washington R. R. & Navigation Co. right of way, due west of cattle guard; iron post stamped "1106 Wash. 1915".....	1,106.205
Relief, opposite signboard, top of rail.....	1,097.2
Milepost 90, east side of track; spike scribed "U. S. 991 B. M.".....	990.84
Milepost 91, 130 feet south of, back side of emergency rail stand; spike scribed "U. S. 890 B. M.".....	889.72
Milepost 92, east side of track; spike scribed "U. S. 825 B. M.".....	824.56
Starbuck, 1.6 miles south of, 500 feet north of stock subway under county road, 60 feet west of small creek bank, west side of road, 500 feet west of railroad, at angle in fence; iron post stamped "781 Wash 1915" (p. b. m. 32).....	780.286
Milepost 93, 100 feet south of, back side of emergency rail stand, spike scribed "U. S. 746 B. M.".....	745.36

WALLULA QUADRANGLE.

[Latitude 46°-46° 30'; longitude 118° 30'-119°.]

From point near Pasco along Northern Pacific Ry. to point near Hunts Junction.

Precise leveling by U. S. Coast and Geodetic Survey.

Hunts Junction, 6.4 kilometers northwest of, opposite and about 25 meters northwest of mile pole 5, 11.2 meters northeast of nearest rail, in line of telegraph poles; red metal cap on iron pipe (C. & G. S. "J ₃ ").....	327.597
Hunts Junction, 3.2 kilometers northwest of, 1.6 meters northwest of first telegraph pole southeast of mile pole 3, 11.2 meters northeast of nearest rail, in line with telegraph poles; red metal cap on iron pipe (C. & G. S. "K ₃ ").....	341.906
Hunts Junction, in northeast corner of Northern Pacific Ry. section house yard, 3 meters west of nearest rail on main track, 0.8 meter south of north fence, 0.8 meter west of east fence inclosing yard; bottom of square hole in top of granite post, marked "U. S. □ B. M." (C. & G. S. "L ₃ ").....	324.855
Hunts Junction, in southeast corner of yard surrounding residence of storekeeper for Northern Pacific Ry., 18 meters west of nearest rail of main track, 0.7 meter from south and east fences inclosing yard; red metal cap on iron pipe (C. & G. S. "M ₃ ").....	320.948
Hunts Junction, near, at west end of Northern Pacific Ry. bridge over Walla Walla River, in top of concrete abutment, 1.4 meters from east and south edges, 1.8 meters south of nearest rail; red metal disk (C. & G. S. "N ₃ ").....	398.474
Hunts Junction, near, at east end of Northern Pacific Ry. bridge over Walla Walla River, in top of abutment, 0.8 meter west of east edge, 0.5 meter north of south edge, 1.8 meters south of nearest rail; red metal disk (C. & G. S. "O ₃ ").....	402.844
Hunts Junction, 8.4 kilometers southeast of, about 2 meters south of seventh pole southwest of mile pole 5, 12 meters south of nearest rail; red metal cap on iron pipe (C. & G. S. "P ₃ ").....	418.080
Hunts Junction, 6 miles southeast of, at mile pole 6, on right of way, 15 meters west of track; bottom of square hole in top of stone post, marked "U. S. □ B. M." (C. & G. S. "Q ₃ ").....	473.151

From Pasco south along Northern Pacific Ry. to Hunts Junction, thence along Oregon-Washington R. R. & Navigation Co.'s line to Oregon-Washington State line 6.2 miles southwest of Wallula.

Precise leveling in 1898 by H. S. Crowe.

Milepost 236, 90 feet northeast of, 42 feet east of center of track, 5 feet north of telegraph pole; iron post stamped "342 A".....	Feet. 343.387
Hunts Junction, 120 feet southeast of milepost 240, 36 feet east of track, 5 feet east of telegraph pole; iron post stamped "341 A".....	343.011
Wallula, 18 feet north of center of station, 290 feet north of south end of bridge, 27 feet south of center of track at Northern Pacific Ry. connection; iron post stamped "322 A".....	323.568
Milepost 208, 150 feet east of, 570 feet east of State line post, 18 feet south of track; iron post stamped "318 A".....	319.393

NOTE.—The following additional bench marks in the Wallula quadrangle were established by the Reclamation Service in 1904, the primary leveling being done by H. Bucher.

From Pasco east along Snake River and county road and across country to sec. 11, T. 9 N., R. 31 E., thence northwest to milepost 221, Northern Pacific Ry. (part of line).

T. 9 N., R. 30 E., NE. $\frac{1}{4}$ sec. 36, on highest point of hill about 500 feet north of road, triangulation station "Snake Signal"; iron post stamped "482 T".....	481.838
T. 9 N., R. 31 E., south of center of sec. 20, 60 feet north of road, 240 feet west of east (upstream) end of grove of locust trees situated on a flat between Snake River and the hills; iron post stamped "356 T".....	355.757
T. 9 N., R. 31 E., NW. $\frac{1}{4}$ sec. 23, 250 feet from Snake River, on west side of county road, 20 feet south of private gate in fence; iron post stamped "408 T".....	407.614
T. 9 N., R. 31 E., south quarter corner of sec. 11, 10 feet east of junction of roads, $2\frac{1}{2}$ feet from wire fence, on north side of road; iron post stamped "668 T".....	667.381
T. 9 N., R. 31 E., NE. $\frac{1}{4}$ sec. 4, 0.8 mile northeast of junction of roads at bench mark 668 T, on top of sand ridge, triangulation station "No. 7"; iron post stamped "752 T".....	751.663
T. 10 N., R. 30 E., east-central part of sec. 25, on top of sand ridge, triangulation station "No. 6"; iron post stamped "556 T".....	556.237

From triangulation station No. 6 north and west to Eltopia.

T. 10 N., R. 31 E., 500 feet southeast of northwest corner of sec. 18, on ridge on west side of coulee; iron post stamped "675 T".....	675.103
T. 11 N., R. 30 E., 550 feet a little west of north of southeast corner of, on sand ridge on west side of coulee; iron post stamped "708 T".....	707.393
T. 11 N., R. 30 E., 1,250 feet west of north of southeast corner of SE. $\frac{1}{4}$ sec. 24, 2 miles south of point where road from Eltopia to Ryegrass Wells turns east to go up over high ridge, on ridge; iron post stamped "592 T".....	591.657

From sec. 11, T. 9 N., R. 31 E., northeast along section roads to point near Fishhook Ferry, thence north and west to Eltopia.

T. 9 N., R. 32 E., northwest corner of sec. 6, on south side of road, by large fence post on east side of gate, iron post stamped "781 T".....	780.283
T. 10 N., R. 32 E., at southeast corner of sec. 20, on north side of road, 2 feet from wire fence, 15 feet west of crossroads; iron post stamped "795 T".....	794.900

T. 10 N., R. 32 E., in south center of sec. 14, 1.3 miles northwest of Fishhook Ferry on Snake River, on north side of road, near signboard between forks of road; iron post stamped "738 T".....	Feet. 737. 518
T. 10 N., R. 32 E., north-central part of sec. 3, 50 feet west of road at summit of ridge; iron post stamped "1136 T".....	1, 135. 270
T. 11 N., R. 32 E., near center of sec. 22, 3 feet east of signboard between forks of road, marked "Fishhook Ferry 6 miles" pointing down road to south, road to southeast leads to Paradise Ferry; iron post stamped "993 T".....	992. 643
T. 11 N., R. 32 E., 900 feet north of southwest corner of sec. 17; 200 feet east of dim road turning off down coulee, on south side of road by stone and stake marked "R. A." in coulee north of Ryegrass Wells; iron post stamped "811 T".....	810. 312
T. 11 N., R. 31 E., north-central part of sec. 14, first post north of fence corner on north side of road, in bottom of large coulee, smaller coulee with road comes in from the north, iron post stamped "680 T".....	679. 856
T. 11 N., R. 31 E., south-central part of sec. 7, 2.7 miles southeast of Eltopia, 40 feet east of forks of road, on highest point of ridge, 15 feet north of road; iron post stamped "835 T".....	834. 742

At Fishhook Ferry.

Fishhook Ferry, 120 feet east of Oregon R. R. & Navigation Co. track, 10 feet southeast of telegraph pole on hillside, telegraph pole is opposite crossing sign on railroad where road leads down to Fishhook Ferry landing; iron post. (Reset 1915 by D. S. Birkett, same description and elevation).....	423. 649
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From point near Hunts Junction east along Oregon-Washington R. R. & Navigation Co. track to point near Whitman.

Primary leveling in 1915 by D. S. Birkett.

Hunts Junction, near, at west end of Northern Pacific Ry. bridge over Walla Walla River, in top of concrete abutment, 1.4 meters from east and south edges, 1.8 meters south of nearest rail; red metal disk (C. & G. S. p. b. m. "N ₃ ", described in Bull. 557, p. 163).....	398. 474
Wallula, 5 miles east of, 200 feet north of milepost 5, 25 feet east of Oregon-Washington R. R. & Navigation Co. track, brace to telegraph pole; spike marked "U. S. 354 B. M.".....	353. 71
Wallula, 6 miles east of, 200 feet west of milepost 6, north side of track, brace to telegraph pole; spike marked "U. S. 368 B. M.".....	368. 07
Reese, 0.51 mile west of, opposite milepost 7, section post 68; spike on back scribed "U. S. 378".....	377. 73
Reese, 100 feet south of small station, 7.5 miles from Wallula, at north side of road to Walla Walla, 40 feet south of Oregon-Washington R. R. & Navigation Co. track; iron post stamped "386 Wash. 1915" (p. b.m.1)...	386. 147
Reese, 0.51 mile south of, 15 feet north of milepost 8; point on solid basalt rock, marked "U. S. 405 B. M.".....	405. 06
Divide, 1 mile west of, 200 feet east of milepost 9, brace to telegraph pole; spike marked "U. S. 437 B. M.".....	436. 76
Divide siding, 120 feet west of west end of warehouse, north edge of right of way; iron post stamped "486 Wash. 1915".....	485. 847
Divide siding, 1 mile east of, 200 feet east of milepost 11, signboard "Divide 1 mile;" spike scribed "U. S. 481 B. M.".....	481. 13
Divide siding, 2 miles east of, milepost 12, brace to telegraph pole; spike marked "U. S. 461 B. M.".....	460. 56

Touchet, 1.82 miles west of, 40 feet west of private road crossing north edge of Oregon-Washington R. R. & Navigation Co. right of way; iron post stamped "427 Wash. 1915" (p. b. m. 3).....	Feet. 426.457
Touchet, 0.96 mile west of, 200 feet west of milepost 14, telegraph pole; spike marked "U. S. 433 B. M.".....	432.64
Touchet, 400 feet west of station, east side of Oregon-Washington R. R. & Navigation Co. water tank, concrete pedestal; bronze tablet stamped "443 Wash. 1915" (p. b. m. 4).....	443.330
Touchet, 1.08 miles east of, 200 feet west of milepost 16, telegraph pole; spike marked "U. S. 447 B. M.".....	446.46
Touchet, 2.09 miles east of, milepost 17; spike marked "U. S. 458 B. M."..	457.50
Lowdens, 1.18 miles west of, 400 feet east of milepost 18, telegraph pole; spike marked "U. S. 472 B. M.".....	472.06
Lowdens, 0.26 mile west of, brace to milepost 19; spike marked "U. S. 484 B. M.".....	484.33
Lowdens, 480 feet west of small station, 50 feet north of Oregon-Washington R. R. & Navigation Co. track, at jog in right of way fence, south edge of country road; iron post stamped "489 Wash. 1915".....	488.604
Lowdens, opposite Oregon-Washington R. R. & Navigation Co. station, top of rail.....	490.6
Lowdens, 0.77 mile east of, 20 feet east of milepost 20, telegraph pole; spike marked "U. S. 496 B. M.".....	495.95
Lowdens, 1.81 miles east of, 200 feet east of milepost 21, telegraph pole; spike marked "U. S. 512 B. M.".....	521.94
Reavis, opposite signboard; top of rail.....	535.9
Lowdens, 2.79 miles east of, 200 feet east of milepost 22, telegraph pole; spike marked "U. S. 540 B. M.".....	539.86
Whitman, 1.06 miles west of milepost 23; spike marked "U. S. 567 B. M."..	566.84
Whitman, 0.75 mile west of, railroad crossing, 100 feet north of track, west side of road, near line of right of way fence; iron post stamped "570 Wash. 1915" (p. b. m. 6).....	569.591
From point near Lamar west along Northern Pacific Ry. and highway to Fishhook Ferry.	
Lamar, 0.4 mile east of, 70 feet west of milepost 40, 15 feet north of, Northern Pacific Ry. emergency rail stand, back side of west post of, spike scribed "U. S. 859 B. M.".....	859.14
Lamar, opposite semaphore; top of nearest rail.....	844.5
Lamar, 0.6 mile west of, road crossing, 70 feet west of milepost 39, north side of track cattle guard post, spike scribed "U. S. 849 B. M.".....	848.81
Lamar, 1.3 miles west of, T. 9 N., R. 34 E., near quarter corner between secs. 2 and 3, point where road to Eureka passes through concrete subway under Northern Pacific Ry. south portal, top of; bronze tablet stamped "836 Wash. 1915" (p. b. m. 23).....	835.229
Lamar, 1.75 miles west of, 200 feet east of milepost 38, north side of track, emergency rail stand; spike scribed "U. S. 890 B. M.".....	889.43
Eureka, 3.87 miles east of, 100 feet east of milepost 37, north side of track, emergency rail stand; spike scribed "U. S. 942 B. M.".....	941.57
Eureka, 2.9 miles east of, 300 feet east of milepost 36, emergency rail stand; spike scribed "U. S. 989 B. M.".....	988.65
Eureka, 1.8 miles east of, 200 feet west of milepost 35, emergency rail stand, back side of; spike scribed "U. S. 1030 B. M.".....	1,030.08
Eureka, 0.99 mile east of, 780 feet east of milepost 34, emergency rail stand, back side of; spike scribed "U. S. 1056 B. M.".....	1,056.06

Eureka, 0.36 mile east of Northern Pacific Ry. station, road crossing, T road south, 250 feet south of church, east side of road, south edge of right of way; iron post stamped "1061 Wash, 1915" (p. b. m. 24).....	Feet. 1,061.139
Eureka, opposite semaphore; top of nearest rail.....	1,056.9
Eureka, 0.15 mile west of station, road crossing, top of rail; telephone pole marked "1053".....	1,052.7
Eureka, 0.8 mile southwest of station, road crossing, north side of road, railroad crossing signpost; spike scribed "U. S. 1070 B. M.".....	1,069.19
T. 9 N., R. 33 E., near quarter corner, north side of sec. 3, 1.34 miles west of railroad crossing, south side of road, 800 feet east of windmill, fence corner, post; spike scribed "U. S. 1048 B. M.".....	1,047.59
T. 9 N., R. 33 E., sec. 3, north side of road, 50 feet east of windmill, top of concrete collar of reservoir; chiseled square marked "1072".....	1,071.43
T. 10 N., R. 33 E., near quarter corner, south side of sec. 33, north side of road, corner fence post; spike marked "U. S. 1022 B. M.".....	1,022.17
T. 10 N., R. 33 E., southwest corner of sec. 33, T road north, north side of road; iron post stamped "950 Wash. 1915" (p. b. m. 25).....	949.553
T. 9 N., R. 33 E., northeast corner of sec. 6, point where road to Ferry turns north, signpost; spike marked "U. S. 829 B. M.".....	828.65
T. 10 N., R. 33 E., southwest corner of sec. 29, corner fence post; spike marked "U. S. 743 B. M.".....	742.48
T. 10 N., R. 33 E., southeast corner of sec. 19, 400 feet east of point where road from Eureka turns west toward Ferry, north side of dim road; iron post stamped "945 Wash. 1915".....	944.679
T. 10 N., R. 33 E., near the northwest corner of sec. 30, opposite red barn, south side of road, at angle in fence post; spike scribed "U. S. 800 B. M.".....	800.00
Page siding, on Oregon-Washington R. R. & Navigation Co. line, 50 feet north of station, west side of track, concrete base of semaphore 2333; chiseled square.....	406.0
Page station (Oregon-Washington R. R. & Navigation Co.), 180 feet south of, just below Fishhook Ferry, 60 feet east of track, 150 feet north of warehouse north side of road, fence corner; iron post stamped "407 Wash. 1915" (p. b. m. 27).....	405.988
Fishhook Ferry (Page Ferry), west bank of Snake River, on Jacob Klundt place, concrete platform of well, 18 inches north of pump; chiseled square.....	398.96
T. 10 N., R. 32 E., in south corner of sec. 14, 1.3 miles northwest of Fishhook Ferry on Snake River, on north side of road, near signboard between forks of road; iron post stamped "738 T".....	737.518

From Page northeast along Spokane, Portland & Seattle Ry. to Burr Canyon.

Leveling in 1916 by D. S. Birkett.

T. 10 N., R. 32 E., in south center of sec. 14, 1.3 miles northwest of Fishhook Ferry on Snake River, on north side of road, near signboard between forks of road; iron post stamped "738 T".....	737.518
Fishhook Ferry, Klundt's ranch, concrete platform for windmill; chiseled square.....	398.96
Page, about 500 feet west of post office, on north end of Spokane, Portland & Seattle trestle 250, east side of track; copper nail in tie.....	460.18
Page, top of nearest rail, opposite signboard.....	466.2
Page, 0.33 mile northeast of, 210 feet southeast of milepost 251, 6 feet west of track; point in rock cut, marked "U. S. 470 B. M.".....	469.88

Page, 1.05 miles northeast of, northwest corner trestle 251-7, west end of cap of bent; railroad spike marked "U. S. 475 B. M.".....	Feet. 474.71
Page, 2.28 miles northeast of, concrete bridge 253-0 over private road, 200 feet south of milepost 253, east side of track, on concrete bulkhead; aluminum tablet stamped "487 Wash. 1916".....	486.298
Page, 3.32 miles northeast of, opposite milepost 254, south side of track, on east end emerging rail stand; copper nail marked "U. S. 498 B. M."...	497.46
Milepost 255, top of nearest rail opposite.....	497.3
Snake River Junction, 1 mile southwest of, top of nearest rail opposite iron standpipe in front of concrete water tank.....	497.10
Snake River Junction, in front of operator's window of Spokane, Portland & Seattle station, in concrete platform; aluminum tablet stamped "499 Wash. 1916".....	498.499
Milepost 257, top of nearest rail opposite.....	506.1
Signpost "1 mile S", top of nearest rail opposite.....	512.6
Snake River Junction, 1.9 miles northeast of, 290 feet northeast of signpost "Jc. one mile", 7 feet west of upper track, 2 feet above rail; chiseled square on basalt rock, marked "U. S. 517 B. M.".....	517.07
Milepost 258, top of nearest rail opposite.....	523.3
Snake River Junction, 2.53 miles northeast of, 12 feet west of milepost 259, top of emergency rail stand; copper nail marked "U. S. 543 B. M."...	542.97
Snake River Junction, 3.58 miles northeast of, 17 feet northwest of milepost 260, east side of track, top of emergency rail stand; copper nail marked "U. S. 565 B. M.".....	564.20
Burr siding, near upper end of, opposite milepost 262, 12 feet southeast of track, top of emergency rail stand; copper nail marked "U. S. 602 B. M.".....	601.98
Burr siding, 1.11 miles southwest of, 0.34 mile northeast of milepost 261, point where wagon road crosses upper track, 27 feet west of track, north side of road; iron post stamped "589 Wash. 1916".....	589.019
Burr siding, top of nearest rail opposite signboard.....	611.0
Milepost 263, top of nearest rail opposite.....	621.7
Farrington, 5.23 miles southwest of, 1,000 feet southwest of south portal of, tunnel 14, top of north end of retaining wall, east side track; chiseled square marked "U. S. B. M." marked "631".....	630.90
Farrington, 4.68 miles southwest of, 240 feet northeast of milepost 264, east side track, top of emergency rail stand; copper nail marked "U. S. 643 B. M.".....	642.30
Farrington, 3.67 miles southwest of, opposite milepost 265, east side track, top emergency rail stand; copper nail marked "U. S. 663 B. M.".....	662.85

WENATCHEE QUADRANGLE.

[Latitude 47° 15'-47° 30'; longitude 120° 15'-120° 30']

From point near Mission southeast along Great Northern Ry. to Malaga.

Primary leveling in 1898 by E. M. Fry, in 1903 by R. A. Farmer, and in 1909 by C. H. Semper.

Wenatchee, in high school building, south side of east entrance, in brick wall 15 feet above ground; aluminum tablet stamped "802" (set and checked by Charles Hartman, jr., from b. m. at bank).....	801.672
Wenatchee, 100 feet west of station, 150 feet east of water tank; iron post stamped "639 T".....	639.485
Wenatchee, Columbia River Bank building, front of, 2 feet above sidewalk, 8 feet north of entrance door; aluminum tablet stamped "669 T"...	669.589
Wenatchee, 3 miles east of, 300 feet east of milepost 1648, north of road crossing, at corner of fence; iron post stamped "649 T".....	649.319

From Wenatchee north along State road up Columbia River to milepost 7.

Milepost 7, about 0.2 mile south of, 1,000 feet northwest of old lime works on west side of road; iron post stamped "738 T".....	Feet. 738.090
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From Wenatchee east along highway 3 miles.

Bridge over Wenatchee River, center of.....	690.3
Wenatchee, 1.2 miles east of, 800 feet northeast of east end of bridge over river, on road to north, on west side of large rock; top of rock marked "U. S. □ B. M. 678".....	678.59
Wenatchee, 2.5 miles northeast of, at northwest corner of H. J. Betty ranch (road turns east up canyon); iron post stamped "965".....	965.900

WICKERSHAM QUADRANGLE.

[Latitude 48° 30'–48° 45'; longitude 122°–122° 15']

From west border of quadrangle east to Wickersham, thence north along Northern Pacific Ry. to north border of quadrangle.**Primary leveling in 1898 by W. S. Wheeler and in 1905 by G. C. Jacobs.**

Wickersham, 2 miles northwest of, 185 feet west of shingle mill switch stand, 2,400 feet east of milepost 3; iron post stamped "356 B".....	357.096
Wickersham, at Wickersham Avenue crossing, 2.5 feet north of telegraph pole, east of track; iron post stamped "312 B".....	312.909
Saxon switch, 0.3 mile north of, 0.25 mile north of milepost 100, southeast angle of road crossing, near fence; iron post stamped "319 B".....	319.941
Green Spur, 970 feet south of switch stand, west of track and south of road crossing, 950 feet south of milepost 104; iron post stamped "268 B"....	268.753

From Wickersham south along Northern Pacific Ry. to Sedro Woolley.

Kane switch, 20 feet south of signboard, west of track, 10 feet south of northeast corner of Kane shingle mill office; iron post stamped "269 B"...	269.633
Thornwood, 75 feet south of station, west of track, 1,000 feet north of Kane water tank; iron post stamped "361 B".....	362.127
Sedro Woolley, 2.6 miles north of, 390 feet south of trestle 52, 450 feet north of milepost 88; iron post stamped "150 B".....	151.220
Sedro Woolley, 20 feet northeast of northeast corner of station; iron post stamped "50 T. U. L.".....	50.204

From Sedro Woolley east along Great Northern Ry. to Lyman, thence south along highway to Lyman Ferry.

Minkler & Son's shingle mill, 700 feet west of bridge 37, 125 feet east of switch, south of track, between platform and cook house; iron post stamped "65 T. U. L.".....	63.828
Lyman, 61.6 feet north of track and about 15 feet east of crossing at station, north side of wagon road; iron post stamped "96 Wash 1909" (probably destroyed by railroad company).....	95.497
Lyman, 1 mile east of, front of T road south of north end of bridge; iron post stamped "80 Wash 1909".....	80.123
Lyman Ferry, 450 feet south of, south side of main road at junction of road to ferry; iron post stamped "99 Wash 1909".....	99.244

WILBUR QUADRANGLE.

[Latitude 47° 30'–48°; longitude 118° 30'–119°.]

From point near Creston west along Northern Pacific Ry. to Coulee City. (Part of unadjusted line closing –3.853 feet in error.)**Primary leveling in 1903 by Philo Holbrook, jr.**

Creston, 0.5 mile east of, at crossroads; iron post stamped "2444 T"....	2,441.913
Wilbur station; iron post stamped "2165 T".....	2,162.758

	Feet.
Govan station, at milepost 81; iron post stamped "2069 T".....	2, 066. 674
Almira station; iron post stamped "1916 T".....	1, 913. 756

WILSON CREEK QUADRANGLE.

[Latitude 47° 15'-47° 30'; longitude 119°-119° 15'.]

- From Adrian east along Great Northern Ry. to point near Wilson Creek (part of spur line; elevations unreliable).

Primary leveling in 1903 by R. A. Farmer.

Milepost 1581, 150 feet north of; iron post stamped "1259 T".....	1, 260. 055
Wilson Creek Wash, 2 miles west of, at road crossing, 8 feet east of sign-board; iron post stamped "1272 T".....	1, 273. 070

WINCHESTER QUADRANGLE.

[Latitude 47°-47° 15'; longitude 119° 30'-119° 45'.]

From milepost 1611 east along Northern Pacific Ry. to Winchester.

Primary leveling in 1903 by R. A. Farmer and in 1909 by C. H. Semper.

Winchester, 20 feet south of track, opposite section house, in top of granite boulder; aluminum tablet stamped "1277 T".....	1, 277. 333
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From point 5 miles south of Ephrata south along highway to Morrison, thence west 3 miles, thence northwest to Winchester.

Ephrata, 6.3 miles south of, 30 feet east of road, 500 feet north of road to east, on top of large boulder; marked "U. S. □ B. M. 1241".....	1, 241. 33
T. 20 N., R. 26 E., northwest corner of sec. 22; iron post.....	1, 243. 742
T. 20 N., R. 26 E., southwest corner of sec. 34; iron post.....	1, 246. 697
T. 19 N., R. 26 E., southwest corner of sec. 6; iron post.....	1, 215. 386
T. 20 N., R. 25 E., southwest corner of sec. 26; iron post.....	1, 214. 467
T. 20 N., R. 25 E., west quarter corner of sec. 22; iron post.....	1, 216. 061
Winchester, 20 feet south of track, opposite section house, in top of granite boulder; aluminum tablet stamped "1277".....	1, 277. 333

From point 3 miles west of Morrison west along highway 6 miles.

T. 19 N., R. 25 E., northwest corner of sec. 11, in corner fence post; spike marked "1156".....	1, 156. 48
T. 19 N., R. 25 E., northwest corner of sec. 10; iron post.....	1, 212. 866
T. 19 N., R. 25 E., northwest corner of sec. 7; iron post.....	1, 201. 851

From Morrison south along highway 3 miles, thence west 5 miles, thence south 2 miles and west to southwest corner of T. 19 N., R. 25 E.

T. 19 N., R. 26 E., northwest corner of sec. 22, 2 miles south by 0.5 mile east of Morrison; iron post.....	1, 226. 340
T. 19 N., R. 26 E., northwest corner of sec. 30; iron post.....	1, 160. 917
T. 19 N., R. 25 E., northwest corner of sec. 34; iron post.....	1, 184. 784
T. 19 N., R. 26 E., northwest corner of sec. 30; iron post.....	1, 160. 917
T. 19 N., R. 25 E., northeast corner of sec. 34; iron post.....	1, 184. 784
T. 19 N., R. 25 E., southeast corner of sec. 32; iron post.....	1, 166. 645
T. 19 N., R. 25 E., southwest corner of sec. 31; iron post stamped "1185 T".....	1, 185. 687

From point 3 miles south of Morrison south along highway 8 miles.

T. 19 N., R. 26 E., southwest corner of sec. 34; iron post.....	1, 148. 217
T. 18 N., R. 26 E., northwest corner of sec. 22; iron post.....	1, 134. 240
T. 18 N., R. 26 E., near southeast corner of sec. 28, 20 feet west of road, on top of small hill; iron post.....	1, 142. 678

Reclamation Service bench mark.

Leveling in 1904 by Philo Holbrook, jr.

Feet.

Tps. 19 and 20 N., Rs. 24 and 25 E., at corner; iron post stamped "1206 T". 1, 206. 744

WINONA QUADRANGLE.

[Latitude 46° 30'-47°; longitude 117° 30'-118°.]

From point 6 miles east of Starbuck east along Oregon-Washington R. R. & Navigation Co. track to Houser. (Unadjusted line.)

Primary leveling in 1915 by D. S. Birkett.

Milepost 7, north side of track; spike scribed "U. S. 879 B. M.".....	878. 40
Milepost 8, brace to, north side of track; spike scribed "U. S. 913 B. M."..	913. 13
Delaney, opposite signboard; top of rail.....	911. 3
Delaney, 1.1 miles east of, north side of track, 3 feet west of milepost 9 iron post stamped "957 Wash. 1915" (p. b. m. 36).....	956. 943
Milepost 10, north side of track; spike scribed "U. S. 1001 B. M.".....	1, 000. 93
Milepost 11, opposite back side of emergency rail stand, north side of track; spike scribed "U. S. 1034 B. M.".....	1, 033. 92
Jackson, 270 feet west of signboard, north edge of right of way, in line of north-south fence; iron post stamped "1051 Wash. 1915" P. B. M. 37....	1, 051. 036
Jackson, opposite signboard; top of rail.....	1, 054. 3
Milepost 12, north side of track; spike scribed "U. S. 1075 B. M.".....	1, 074. 48
Milepost 13, opposite back side of emergency rail stand; spike scribed "U. S. 1117 B. M.".....	1, 116. 45
Milepost 14, north side of track; spike scribed "U. S. 1160 B. M.".....	1, 160. 22
Chard, 300 feet west of signboard, 20 feet east of water tank, 40 feet north of Oregon-Washington R. R. & Navigation Co. track, south side of con- crete gasoline reservoir; bronze tablet stamped "1178 Wash. 1915" (p. b. m. 38).....	1, 178. 139
Milepost 15, north side of track; spike scribed "U. S. 1195 B. M.".....	1, 195. 23
Milepost 16, north side of track; spike scribed "U. S. 1210 B. M.".....	1, 240. 31
Dodge, opposite signboard; top of rail.....	1, 252. 7
Milepost 17, 100 feet east of, back side of emergency rail stand; spike scribed "U. S. 1282 B. M.".....	1, 282. 26
Milepost 18, north side of track; spike scribed "U. S. 1330 B. M.".....	1, 329. 82
Houser, 300 feet west of, 280 feet east of milepost 19, south edge of right of way, in line of north-south fence; iron post stamped "1366 Wash. 1915".	1, 365. 889

YAKIMA QUADRANGLE.

[Latitude 46° 30'-47°; longitude 120°-120° 30']

From Umtanum along Northern Pacific Ry. to Selah.

Precise leveling in 1898 by H. S. Crowe.

Umtanum, 0.9 kilometer east of, on east concrete abutment of bridge over Umtanum Creek, in upper surface, 0.25 meter north of south edge, 0.25 meter from west edge of abutment, 1.55 meters south of nearest rail; copper bolt lettered "U. S. B. M." (C. & G. S. "U ₁ ").....	1, 337. 652
Canyon, at siding, in top of granite foundation of water tank, at northeast corner; bottom of rectangular hole, letters "U. S. B. M." cut near bench mark (C. & G. S. "V ₁ ").....	1, 296. 438
Roza, in southwest corner of section-house yard, 1 meter north of fence, 1.55 meters east of first telegraph pole east of station; red metal cap on iron pipe (C. & G. S. "W ₁ ").....	1, 245. 276

Selah, 0.8 kilometer east of, in upper surface of center pier of masonry for Northern Pacific Ry. bridge over Yakima River, 2 meters below level of rail and 1 meter outside line of north rail; red metal disk (C. & G. S. "X ₁ ").....	Feet. 1, 138. 942
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Near Yakima.

Yakima, 1.5 miles east of, on east concrete abutment of Northern Pacific Ry. bridge over Atanum Creek, 0.25 meter east of west edge. 0.3 meter north of south end of abutment, 1.3 meters south of nearest rail; bottom of square hole, lettered "U. S. \square B. M." disk (C. & G. S. "D ₂ ").....	952. 577
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From Thrall south along Northern Pacific Ry. to Roza.

Umtanum, 85 feet southwest of section house, 56 feet southwest of center of track; iron post stamped "1350 T".....	1, 350. 194
Umtanum, in front of section house; top of rail.....	1, 349. 0
Roza, opposite station, 198 feet west of telegraph office, 0.25 mile east of milepost 148; iron post stamped "1249 T".....	1, 249. 440
Roza, in front of station; top of rail.....	1, 249. 3

From Roza south along Northern Pacific Ry. to Selah.

Selah, 2.6 feet southwest of west corner of fence around section house, 18 feet from center of main track; iron post stamped "1147 T".....	1, 147. 743
Selah, in front of section house; base of rail.....	1, 148. 9

From Yakima south along Northern Pacific Ry. to Parker.

Yakima, in front of telegraph office; base of rail.....	980. 5
Yakima, 1.25 miles north of bridge over Yakima River, 110 feet west of wagon road, 100 feet south of intersection of Fort Simcoe and Toppenish roads, 125 feet east of main line of Northern Pacific Ry., at corner of fence at cattle crossing; iron post stamped "937 T".....	937. 835

From Cohasset west along Chicago, Milwaukee & St. Paul Ry. to Boylston.

Primary leveling in 1909 by C. H. Semper.

Beverly, 6.4 miles west of, 45 feet west of railroad crossing, 25 feet south of track; iron post.....	1, 248. 234
Beverly, 8.7 miles west of, 75 feet west of railroad crossing, 15 feet south of rail; iron post.....	1, 511. 75
Rye, switch at west end of water tank, top of west front foundation timber of; spike driven vertically marked "1755".....	1, 755. 38
Rye, 1.3 miles west of, 250 feet west of trestle, 15 feet north of track, at east end of railroad cut; iron post stamped "1924".....	1, 923. 942
Cheviot, in front of station sign; top of rail.....	2, 164. 5
Cheviot, 0.8 mile west of, at railroad overhead crossing of highway, 60 feet east of bridge, at telegraph pole; iron post stamped "2271".....	2, 271. 210

From Boylston west along Chicago, Milwaukee & St. Paul Ry. to Ellensburg.

Boylston, at railroad crossing, at west end of tunnel, 40 feet south of track; iron post stamped "2446".....	2, 446. 125
Boylston, 4.3 miles west of, 1,680 feet east of Renslow switch, west end of high trestle over wagon road, east end of cut, 7 feet south of track; iron post stamped "2050".....	2, 050. 305
Boylston, 7.3 miles west of, at corner of wire fence, 200 feet northeast of small cabin, at margin of railroad right of way; iron post stamped "1777".....	1, 776. 829

Kittitas, in front foundation pier of railroad water tank; aluminum tablet stamped "1646"	Feet. 1, 646. 460
Kittitas, 3.4 miles west of, at railroad crossing, west side of road, 15 feet south of track; iron post stamped "1603"	1, 607. 974

From point 2 miles east of Ellensburg northeast along highway to point near southwest corner of T. 18 N., R. 20 E.

Ellensburg, 6.4 miles northeast of, at milepost 6, northwest corner of cross-roads; iron post stamped "1836"	1, 835. 607
Ellensburg, 9.9 miles northeast of, at west corner of road to south; iron post stamped "2031"	2, 031. 503

ZILLAH QUADRANGLE.

[Latitude 46°-46° 30'; longitude 120°-120° 30'.]

From Wapato along Northern Pacific Ry. to Mabton.

Precise leveling by U. S. Coast and Geodetic Survey.

Wapato, in Alexander E. McCredy's yard, 9.05 meters west of the house, 8.6 meters south of front fence, 19 meters east of store; red metal cap on iron pipe (C. & G. S. "E ₂ ")	853. 840
Wapato, 4.5 kilometers east of, in upper surface of south end of east concrete abutment of Northern Pacific bridge 77 over an irrigation ditch, 0.2 meter from west and south edges of abutment, 1.5 meters south of nearest rail; red metal disk (C. & G. S. "F ₂ ")	812. 777
Toppenish, 21.07 meters west of northwest corner of section house, 1 meter inside of fence inclosing yard, 11.34 meters south of nearest rail of main track; red metal cap on iron post (C. & G. S. "G ₂ ")	754. 289
Toppenish, in upper surface of concrete foundation supporting pillars of Northern Pacific water tank, under northern one of two western pillars, 0.26 meter north of south edge, 0.25 meter from east edge, 7 meters north of nearest rail of main track; copper bolt lettered "U. S. B. M." (C. & G. S. "H ₂ ")	756. 215
Alfalfa, 6.2 meters west of mile pole 66, 1.75 meters east of telegraph pole, in line with telegraph poles, 14.67 meters south of nearest rail of main track; red metal cap on iron pipe (C. & G. S. "I ₂ ")	714. 657
Satus, 0.9 kilometer east of, 1.78 meters west of second telegraph pole east of milepole 60, 10.89 meters south of nearest rail and in line with telegraph poles; red metal cap on iron post (C. & G. S. "J ₂ ")	668. 975
Mabton, 0.5 kilometer east of, 4.35 meters west of nearest (first) telegraph pole east of milepost 52 and in line with telegraph poles, 15.45 meters south of nearest rail of main track; red metal cap on iron pipe (C. & G. S. "K ₂ ")	713. 424

From Parker southeast along Northern Pacific Ry. to Mabton.

Precise leveling in 1898 by H. S. Crowe.

Parker siding, in front of signboard; base of rail	923. 2
Wapato, 180 feet east of east end of station, 50.3 feet south of center of track, at corner of fence; iron post stamped "855 T"	855. 323
Wapato, in front of station; top of rail	859. 3
Toppenish, in front of station; base of rail	757. 4
Toppenish, 108 feet east from northeast corner of station, 25 feet south of center of main track, near corner of fence; iron post stamped "755 T" ..	755. 615
Alfalfa, 0.6 mile northwest of, road crossing, 30 feet south of center of road, 37 feet from center of track, 3 feet north of fifth post along west fence line; iron post stamped "717 T"	716. 882

Granger, 15 feet northeast of northeast corner of Northern Pacific Ry. station, 6 feet south of nearest rail, 6 feet east of east platform; iron post stamped "724 T".....	Feet. 723.705
Satus, 26 feet southwest of southwest corner of platform of station, 30 feet south of center of track, 2.5 feet north of first telegraph pole south of station: iron post stamped "674 T".....	674.195
Satus, in front of station: top of rail.....	675.5
Milepost 198, opposite, 9 feet north of fence, 116 feet south of center of track; iron post stamped "717 T".....	716.566
Mabton, at water tank, 2 feet east of fence around railroad section house, 35 feet north of center of track, 40 feet west of center line of wagon road at crossing of railroad; iron post stamped "715 T".....	715.412

UNITED STATES RECLAMATION SERVICE LEVELS.

From headworks of Sunnyside canal along lower side of canal to Prosser.

Parker bottom, 1.5 miles northeast of, along canal fence, lower side of canal, 200 feet west of corner made by fence intersecting canal fence, near center of sec. 8, T. 11 N., R. 20 E.; iron post stamped "896 T".....	896.485
T. 11 N., R. 20 E., sec. 16, along canal fence, 200 feet west of intersection of section line fence between secs. 15 and 16 and canal line fence at Crook place; iron post stamped "887 T".....	887.511
T. 11 N., R. 20 E., sec. 23, along lower side canal along canal fence, 2.5 miles northwest of Zillah, 900 feet north of road intersecting canal road, at Rowland place; iron post stamped "883 T".....	883.416
T. 11 N., R. 20 E., northeast corner of sec. 25, 1.5 miles north of Zillah, 0.25 mile east of Mason's hop house, corner of fence made by cross fence and canal fence; iron post stamped "890 T".....	890.458
T. 11 N., R. 21 E., on line between secs. 30 and 31, 1.5 miles east of Zillah, at point where section line intersects canal fence 200 feet up canal from wagon bridge across canal; iron post stamped "887 T".....	887.377
T. 11 N., R. 21 E., sec. 33, 3 miles east of Zillah, 800 feet north along fence from corner in front of Foults house, at intersection of fence with canal fence; iron post stamped "872 T".....	872.427
T. 10 N., R. 21 E., 2.4 feet east of section line of secs. 2 and 3, 5 miles east of Zillah, 800 feet west of R. W. Moor house, along canal fence, road intersects canal road at this point; iron post stamped "862 T".....	862.365
T. 10 N., R. 21 E., sec. 1, 2.5 miles west of patrol house 3, 1,000 feet north of fence on section line between secs. 1 and 2 at intersection of road with canal road, 50 feet from canal bank; iron post stamped "864 T".....	864.374
T. 10 N., R. 22 E., 400 feet west of line between secs. 8 and 9, patrol house 3, Snipe's Mountain lateral 50 feet from canal on right-hand side gate, 100 feet west of patrol house; iron post stamped "852 T".....	852.305
T. 10 N., R. 22 E., 100 feet east of half-mile line in sec. 14, 3 miles northwest of Sunnyside, at Mrs. Schlos er's place, 60 feet north of house iron post stamped "851 T".....	851.361

From Alfalfa on main line of Northern Pacific Ry. via Sunnyside Branch to Sunnyside, thence along range line between Ranges 22 and 23 to Mabton.

T. 10 N., Rs. 21 and 22 E., sec. 24, 25 feet west of range line, 3.25 miles east of Granger, along Sunnyside branch Northern Pacific Ry., 18 feet west of nearest rail, 3 feet east of corner of right of way fence, 6 feet west of signboard, 25 feet east of north-south road; iron post stamped "756".....	756.025
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Outlook, 1.2 miles east of, 260 feet east of center of Snipe's Mountain lateral where lateral siphons under Northern Pacific Ry., 18 feet south of nearest rail, 5 feet west of second telephone pole east of Snipe's Mountain lateral where it siphons under Northern Pacific Ry.; iron post stamped "781" ..	Feet. 781.484
Sunnyside, 11 feet northeast of northeast corner of Northern Pacific Ry. station, 11 feet south of northeast rail, main track, 5 feet from corner of platform; iron post stamped "747"	747.268

From Alfalfa west to Range 13 east.

Primary leveling in 1893 by H. S. Crowe, in 1906 by G. Neuner and F. E. Fellows.

T. 10 N., R. 20 E., southwest corner of sec. 23, about 150 feet northwest of Meyer place, 4 feet east of northeast corner fence post, 34 feet east of slough, inside fence corner; iron post stamped "729"	728.948
T. 10 N., R. 20 E., quarter corner west side of sec. 29, 2½ feet north of fence on north side of road, 5 feet east of fence post, 225 feet west of dry ditch crossing road, southwest of P. L. Jensen place; iron post stamped "741" ..	741.435
T. 10 N., R. 19 E., southwest corner of sec. 23, inside northeast fence corner; iron post stamped "757"	757.222
T. 10 N., R. 19 E., 64 feet southwest of northeast corner of sec. 19, 63 feet southwest of bridge over lateral "A", 54 feet west of lateral, 54 feet south of road; iron post stamped "778"	778.523

U. S. GEOLOGICAL SURVEY LEVELS.

From headworks of Sunnyside Canal east via mountain road to point near Sunnyside.

T. 12 N., R. 19 E., sec. 28, 150 feet east of gatehouse of headworks of Sunnyside Canal; iron post stamped "914 T" (U. S. Reclamation Service B. M.)	914.689
T. 11 N., R. 19 E., northeast corner of Dunn's bridge and weir; iron post stamped "891 T" (U. S. Reclamation Service B. M.)	891.544
T. 12 N., R. 20 E., 3 miles northeast of, on summit, highest part in saddle of junction of Yakima and Moxee wagon road, in rock 4 feet east of 3-foot cairn; aluminum tablet stamped "1324 T"	1,324.383
T. 12 N., R. 20 E., sec. 35, highest ridge on route, about 1 mile south of divide between Yakima and Moxee road; iron post stamped "1596 T" ..	1,596.133
T. 11 N., R. 21 E., NE. ¼ sec. 17, 600 feet east of Zillah and Moxee road, about 1 mile north of and on same ridge as Hovis ranch, probably section line; iron post stamped "1335 T"	1,335.258
T. 11 N., R. 22 E., southwest corner of sec. 21, 15 feet north of old State road, 20 feet east of corner of fence; top of rock in road; iron post stamped "1068"	1,068.405
T. 11 N., R. 22 E., SW. ¼ sec. 35, about 3 miles north of Mrs. Schlosser place on Sunnyside Canal, 30 feet north of old State road; iron post stamped "1089"	1,089.280
Old State road, 0.8 mile south of, about 0.5 mile northeast of small blue house; conical rock marked "1037"	1,037.37

From Hovis ranch northeast over Rattlesnake Mountain to Moxee-Rattlesnake divide.

T. 11 N., R. 21 E., sec. 2, summit of saddle on Rattlesnake Mountain, 30 feet west of road; iron post stamped "2118"	2,118.278
T. 12 N., R. 22 E., SW. ¼ sec. 20, Moxee and Rattlesnake divide, 0.2 mile southwest of white house, 0.3 mile northwest of new house, 160 feet north of road, top of small hill; iron post stamped "1803"	1,803.256

From Satus west to R. 19 E., thence south into T. 6 N., thence east to Bickleton.

Satus, 26 feet southwest of southwest corner of platform of station, 30 feet south of center of track, 2.5 feet north of first telegraph pole south of station (station has been moved about 800 feet north); iron post stamped "674 T"	Feet. 674. 195
T. 9 N., R. 21 E., east of center of sec. 9, on Satus Creek road, about 0.5 mile west of house, in corner of fence, road turns around corner; iron post stamped "697"	697. 209
T. 9 N., R. 20 E., 0.25 mile north by 150 feet east of southwest corner of sec. 11, 0.5 mile north of Indian Tulee house, 150 feet south of junction of roads, 3-foot monument at base of rock, in rock; aluminum tablet stamped "847"	846. 973
T. 9 N., R. 20 E., 500 feet south of quarter corner north side of sec. 20, 150 feet above water on north cliff, 1,000 feet south of trail, in large flat rock; aluminum tablet stamped "996"	996. 316
Satus station, 13.4 miles west of, near rock monument, probably township line, 100 feet south of trail, on rock marked "1090 B. M."	1, 090. 07
T. 9 N., R. 19 E., sec. 23, Goldendale wagon road crossing Dry Creek, 200 feet north by 20 feet west of junction of roads; iron post stamped "961". Goldendale road crossing Satus Creek, 20 feet east of, in knuckle of willow tree; 6-inch spike marked "977 U. S."	961. 131 976. 97
T. 9 N., R. 19 E., SW. $\frac{1}{4}$ sec. 34, Goldendale road crossing Satus Creek, 1.5 miles west of, 30 feet south of road, 100 feet southeast of gate to Billy Shannon place, in rock; aluminum tablet stamped "1054"	1, 053. 727
T. 8 N., R. 19 E., SE. $\frac{1}{4}$ sec. 6, 3.8 miles west of, Satus Creek road crossing junction of Goldendale and Bickleton roads, junction of Satus and Logy creeks, 50 feet south of road, 200 feet south of green house; iron post stamped "1145"	1, 144. 955
T. 8 N., R. 19 E., sec. 20, 100 feet east of road in solid rock, 4-foot monument at base; aluminum tablet stamped "2039"	2, 038. 859
T. 7 N., R. 19 E., sec. 4 (unsurveyed section), 40 feet west of road, edge of long draw; iron post stamped "2840"	2, 840. 359
T. 7 N., R. 19 E., sec. 21, in junction of Alfalfa and Satus roads, about 1 mile northeast of pine spring, set on bed rock; iron post stamped "3170". Alfalfa and Satus roads, 0.9 mile south of junction of, 50 feet west of road, top of three-cornered rock; marked "U. S. 3268 B. M."	3, 170. 224 3, 268. 20
Alfalfa and Satus roads, 2.1 miles south of junction of, 10 feet east of road, in root of 3-foot pine tree; 6-inch spike marked "U. S. 3477 B. M."	3, 477. 28
T. 6 N., R. 19 E., SW. $\frac{1}{4}$ sec. 5, on main divide, 15 feet west of road, in rock; aluminum tablet stamped "3901"	3, 901. 139
T. 6 N., R. 19 E., sec. 16, McCreedy sawmill, 0.3 mile west of, 20 feet north of road in small open glade; iron post stamped "3627"	3, 626. 954
T. 6 N., R. 19 E., near west side of sec. 12, McCreedy sawmill, 2.5 miles east of, 20 feet south of road, 30 feet southeast of box culvert, east side of drain, top of rock ledge; aluminum tablet stamped "3544"	3, 543. 979
T. 6 N., R. 20 E., near quarter corner east side of sec. 8, 0.4 mile southeast of ranch house, 80 feet west of forks of road, south side of road, top of boulder 2 by 4 by 1 feet; aluminum tablet stamped "3212"	3, 211. 842

From Bickleton northeast to Mabton.

T. 6 N., R. 20 E., south side of SW. $\frac{1}{4}$ sec. 2, 0.5 mile west of forks of road, northwest corner of Ostrick's ranch house; iron post stamped "3017" ..	3, 016. 941
T. 7 N., R. 21 E., north side of NW. $\frac{1}{4}$ sec. 31, 1.6 miles southwest of Donoho ranch house, 70 feet south of forks of road, east side of road, at top of ridge, 4 feet south of signpost; iron post stamped "2996"	2, 995. 778

T. 7 N., R. 21 E., east side of sec. 20, 0.8 mile northeast of Donoho ranch house, at southern boundary of Yakima Indian Reservation, top of ridge, 40 feet west of wagon road; iron post stamped "2806".....	Feet. 2, 805. 956
T. 7 N., R. 21 E., about sec. 21 (unsurveyed section), 3.9 miles northeast of Donoho ranch house, 0.4 mile north of cabin, 200 feet east of road near top of rocky hill, in top of boulder 5 by 2 by 2 feet; aluminum tablet stamped "1878".....	1, 877. 680
T. 8 N., R. 21 E., about sec. 34 (unsurveyed section), 10.1 miles southwest of Mabton, 500 feet west of ravine, 300 feet east of ravine, north point of ridge, 20 feet west of road; iron post stamped "1281".....	1, 280. 833
T. 8 N., R. 22 E., SW. $\frac{1}{4}$ sec. 18, 6.5 miles southwest of Mabton, 20 feet east of road, 70 feet east of drain; iron post stamped "879".....	879. 277
T. 8 N., R. 22 E., in SE. $\frac{1}{4}$ sec. 9, 3.3 miles southwest of Mabton, 30 feet north of road; iron post stamped "794".....	793. 784
Mabton, at water tank, 2 feet east of fence around railroad section house, 35 feet north of center of track, 45 feet west of center line of wagon road at railroad crossing; iron post stamped "715 T".....	715. 406

From Campbell ranch east to sec. 4, T. 6 N., R. 22 E., thence north 3 miles, thence west to Donoho ranch.

T. 6 N., R. 21 E., center of sec. 5, 1.8 miles southwest of forks of road, Bluelight, 30 feet east of gate, south side of wire fence, in field; iron post stamped "2809".....	2, 808. 844
T. 6 N., R. 21 E., near east side of sec. 2, 2.2 miles east of Bluelight, 0.4 mile south of road and county line, 0.1 mile north of house, wire fence 300 feet west of canyon; iron post stamped "2585".....	2, 584. 819
T. 6 N., R. 22 E., 0.4 mile southeast of northwest corner of sec. 5, 0.3 mile southeast of Kimball ranch house, 150 feet east of bottom of canyon, 1,000 feet east of cabin, east side of canyon, top of ledge of rock; aluminum tablet stamped "2218".....	2, 217. 760
T. 6 N., R. 22 E., 25 feet northwest of SE. $\frac{1}{4}$ sec. 3, 8 feet east of road, L. E. Roberts ranch house, near wire fence; iron post stamped "1945".....	1, 944. 751
T. 7 N., R. 22 E., 50 feet northwest of southeast corner of sec. 21, 0.8 mile northwest of Franklin ranch house, west side of road, near wire fence; iron post stamped "2247".....	2, 246. 741
T. 7 N., R. 21 E., near northeast corner of sec. 25, 0.8 mile east of C. Muller ranch house, 50 feet west of forks of road, south side of road, 10 feet west of wire fence corner; iron post stamped "2587".....	2, 586. 689
T. 7 N., R. 21 E., SW. $\frac{1}{4}$ sec. 22, 350 feet northeast of L. Spencer ranch house, 80 feet south of road, 10 feet south of wire fence, in top of rock ledge; aluminum tablet stamped "2619".....	2, 618. 586

From sec. 4, T. 6 N., R. 22 E., southeast to Sappenfield ranch and return.

T. 6 N., R. 22 E., 3 feet north of southeast corner of sec. 11, 0.3 mile southeast of W. B. Sappenfield ranch house, 20 feet north of road; iron post stamped "1637".....	1, 636. 508
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From sec. 13, T. 7 N., R. 23 E., southwest to southeast corner of sec. 21, T. 7 N., R. 22 E., (part of an unadjusted line closing +0.744 foot).

Primary leveling in 1915 by D. S. Birkett and U. S. Reclamation Service.

T. 7 N., R. 22 E., quarter corner between secs. 13 and 14, turn in road, south side of road, in fence post; spike marked "U. S. 2114 B. M.".....	2, 113. 938
T. 7 N., R. 22 E., in southwest corner of sec. 14, in north side of road, in front of white house, in corner fence post; spike marked "U. S. 2214 B. M.".....	2, 214. 485

T. 7 N., R. 22 E., in southeast corner of sec. 22, west side of road, in fence post; spike marked "U. S. 2103 B. M.".....	Feet. 2, 103. 532
T. 7 N., R. 22 E., 50 feet northwest of southeast corner of sec. 21, 0.8 mile northwest of Franklin ranch house, west side of road, near wire fence; iron post stamped "2247" (Bull. 557, p. 122=2,246. 741).....	2. 247. 485

From sec. 14, T. 10 N., R. 22 E., east to center of sec. 13.

T. 10 N., R. 22 E., 100 feet east of center line in sec. 14, 3 miles northwest of Sunnyside, at Mrs. Schlosser's place, 60 feet north of house; iron post stamped "851 T" (U. S. R. S. B. M.; Bull. 557, p. 119).....	851. 361
T. 10 N., R. 22 E., near quarter corner between secs. 13 and 14, on Sunnyside Canal, south end of concrete weir 20; bronze tablet stamped "850".....	850. 044
NOTE.—This is a regular U. S. Reclamation Service bench mark, but its value is not known.	
T. 10 N., R. 22 E., about center of sec. 13, south end, east side of wagon bridge over Sunnyside irrigation canal, on top of concrete abutment; chiseled square marked "U. S.".....	856. 57

From Alfalfa east to Sunnyside. An old U. S. Reclamation Service bench mark not previously published.

Granger, 15 feet northeast of northeast corner of Northern Pacific station, 6 feet south of nearest rail, 6 inches east of east end of station platform; iron post stamped "724 T" (U. S. Reclamation Service bench mark)....	723. 705
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APPENDIX.

SECONDARY ELEVATIONS.

Secondary elevations from records and topographic maps of the United States Geological Survey, including vertical-angle bench marks, altitudes of well-known summits, water-surface elevations of prominent lakes, and other useful elevations, are given below. These elevations are approximate only and should not be used for accurate work.

Locality.	Quadrangle.	County.	Elevation.
			<i>Fect.</i>
Alta Lake, water surface.....	Okanogan.....	Okanogan.....	1, 175
Alta Mountain.....	Snoqualmie.....	Kittitas.....	6, 265
Anvil Rock.....	Mount Rainier National Park.	Pierce.....	9, 584
Anvil Rock, Johnnie Peak triangulation station, on rocky ridge overlooking upper part of Cowlitz Glacier and projecting from new fields leading up to Camp Muir; triangulation tablet.	.....do.....	.....do.....	9, 620
Atanum Ridge.....	Ellensburg.....	Yakima.....	3, 369
Auburn.....	Tacoma.....	King.....	90
Austin Pass.....	Mount Baker.....	Whatcom.....	4, 630
Bald Butte.....	Pullman.....	Whitman.....	3, 452
Bald Knob.....	Okanogan.....	Okanogan.....	3, 472
Bald Mountain.....	Ellensburg.....	Kittitas.....	5, 906
Do.....	Mount Vernon.....	Skagit.....	2, 482
Do.....	.....do.....	Skagit-Snohomish	3, 045
Do.....	Republic.....	Ferry.....	6, 946
Baldy Mountain.....	Chelan.....	Chelan.....	6, 432
Barrier Peak.....	Mount Rainier National Park.	Pierce.....	6, 514
Bear Creek Mountain.....	Mount Aix.....	Yakima.....	7, 335
Bear Gap.....	.....do.....	Pierce-Yakima.....	5, 882
Bear Lake, water surface.....	Skykomish.....	King.....	3, 670
Bear Mountain.....	.....do.....	Snohomish.....	5, 482
Bearpaw Butte.....	Snoqualmie.....	King-Kittitas.....	4, 835
Beehive Mountain.....	Wenatchee.....	Chelan.....	4, 576
Beljica, Coast Survey triangulation station west of Mount Wow.	Mount Rainier National Park.	Pierce.....	5, 473
Big Four Mountain.....	Stilaguamish.....	Snohomish.....	6, 120
Big Lake, water surface.....	Mount Vernon.....	Skagit.....	85
Big Snow Mountain.....	Skykomish.....	King.....	6, 670
Black Mountain.....	Glacier Peak.....	Snohomish.....	7, 192
Blanca Lake, water surface.....	Skykomish.....	.....do.....	4, 064
Blue Lake, water surface.....	Osoyooos.....	Okanogan.....	1, 765
Bonaparte Mountain.....	.....do.....	.....do.....	7, 280
Boston Peak.....	Glacier Peak.....	Chelan-Skagit.....	8, 850
Boundary Post No. 1, on Carbon River.....	Mount Rainier National Park.	Pierce.....	1, 716
Boundary Post No. 42, on Muddy Fork of Cowlitz River.	.....do.....	Lewis.....	2, 336
Boundary Post No. 46, at Hot Springs ranger station.	.....do.....	.....do.....	2, 004
Boundary Post No. 56, on divide between Ohanapcosh and White rivers drainage in what is locally known as Sheepskull Gap. Bench mark is National Park boundary post stamped "5217."	.....do.....	Pierce.....	5, 213
Boundary Post No. 75, West Fork of White River.....	.....do.....	.....do.....	2, 921

Locality.	Quadrangle.	County.	Elevation.
			<i>Feet.</i>
Boundary Post No. 84, Carbon River (Carbon River ranger station).	Mount Rainier National Park.	Pierce.....	2, 026
Brodie Mountain.....	Republic.....	Ferry.....	5, 685
Buck Creek Pass.....	Stehekin.....	Chelan-Snohomish	5, 796
Buck Mountain.....	Okanogan.....	Okanogan.....	6, 170
Bumping Lake, water surface.....	Mount Aix.....	Yakima.....	3, 395
Burroughs Mountain.....	Mount Rainier National Park.	Pierce.....	7, 830
Cairn Hope Peak.....	Priest Rapids.....	Yakima.....	3, 340
Carbon Glacier, lower end.....	Mount Rainier National Park.	Pierce.....	3, 355
Cascade Pass.....	Glacier Peak.....	Chelan-Skagit.....	5, 392
Castle Rock.....	Mount Rainier National Park.	Pierce.....	6, 116
Cathedral Rock, triangulation station, on west side of Ohanapecosh Glacier.	do.....	do.....	8, 262
Cavanaugh Lake, water surface.....	Mount Vernon.....	Skagit.....	1, 016
Chelan Butte.....	Chelan.....	Chelan.....	3, 892
Chemus Mountain, on sharp rocky summit about 1 mile west of Windy Gap. Trail from Carbon River to West Fork of White River is about 1.8 miles north of point. Trail crosses first ridge after leaving Carbon River about 1/4 mile northwest of point; bronze tablet stamped "6040"	Mount Rainier National Park.	Pierce.....	6, 030
Chimney Rock.....	Skykomish.....	King-Kittitas.....	7, 727
Chopaka Mountain.....	Chopaka.....	Okanogan.....	7, 870
Chopaka triangulation station.....	do.....	do.....	7, 390
Church Mountain triangulation station.....	Mount Baker.....	Whatcom.....	6, 245
Cispus Pass.....	Mount Adams.....	Lewis-Yakima.....	6, 473
Clark Peak.....	Chopaka.....	Okanogan.....	7, 900
Cle Elum Lake, water surface.....	Snoqualmie.....	Kittitas.....	2, 128
Cleman Mountain.....	Ellensburg.....	Yakima.....	5, 000
Cleveland Mountain.....	Skykomish.....	King.....	5, 301
Coal Mountain.....	Stilaguamish.....	Skagit.....	4, 317
Columbia Peak.....	Skykomish.....	Snohomish.....	7, 134
Conconully Lake, water surface.....	Chopaka.....	Okanogan.....	2, 287
Cooke Mountain.....	Republic.....	Ferry.....	5, 097
Copper Mountain.....	do.....	do.....	4, 446
Cowichee Mountain.....	Ellensburg.....	Yakima.....	4, 300
Cowlitz Chimney triangulation station, on highest peak of Cowlitz Chimneys.	Mount Rainier National Park.	Pierce.....	7, 607
Coyote Rocks.....	Mount Adams.....	Yakima.....	6, 130
Crater Lake.....	Mount Rainier National Park.	Pierce.....	4, 929
Crater Lake, water surface.....	Glacier Peak.....	Skagit.....	4, 960
Do.....	Mount Rainier National Park.	Pierce.....	4, 929
Crosby Mountain.....	Skykomish.....	King.....	5, 533
Crown Point.....	Mount Aix.....	Pierce-Yakima.....	6, 470
Cumberland Mountain.....	Republic.....	Okanogan.....	3, 846
Curlew Lake, water surface.....	do.....	Ferry.....	2, 347
Day Lake, water surface.....	Stilaguamish.....	Skagit.....	1, 825
Deer Lake, water surface.....	Skykomish.....	King.....	3, 620
Dege Peak.....	Mount Rainier National Park.	Pierce.....	7, 006
Diamond Butte.....	Mount Adams.....	Yakima.....	5, 796
Dickerman Mountain.....	Glacier Peak.....	Snohomish.....	5, 766
Dock Butte.....	Mount Baker.....	Skagit.....	5, 151
Dome Peak.....	Glacier Peak.....	Chelan-Skagit.....	8, 860
Do.....	Mount Aix.....	Yakima.....	6, 586
Double Peak triangulation station known as Double on southeast extremity of ridge known as Cowlitz Chimneys, on south or highest peak; bronze tablet stamped "6204."	Mount Rainier National Park.	Pierce.....	6, 200
Douglas Mountain.....	Chopaka.....	Okanogan.....	5, 420
Dumpy Lake, water surface.....	Stehekin.....	Chelan.....	2, 213
Eagle Peak triangulation station, on west end of Tatoosh Range.	Mount Rainier National Park.	Lewis.....	5, 955
Ellemeham Mountain.....	Chopaka.....	Okanogan.....	4, 770
Emmons Glacier, lower end.....	Mount Rainier National Park.	Pierce.....	4, 719
Fairfield.....	Oakesdale.....	Spokane.....	2, 559
Pay Peak.....	Mount Rainier National Park.	Pierce.....	6, 500
Fir Mountain.....	Republic.....	Okanogan.....	5, 666
Fish Lake, water surface.....	Chopaka.....	do.....	1, 799
Do.....	Mount Adams.....	Yakima.....	4, 042
Florence Peak.....	Mount Rainier National Park.	Pierce.....	5, 501
Found Lake, water surface.....	Glacier Peak.....	Skagit.....	4, 150
Frailey Mountain.....	Stilaguamish.....	do.....	2, 795
Frenchman Hills.....	Red Rock.....	Grant.....	1, 767

Locality.	Quadrangle.	County.	Elevation.
			<i>Feet.</i>
Frost Mountain.....	Mount Stuart.....	Kittitas.....	5,750
Gable Mountain.....	Coyote Rapids.....	Benton.....	1,116
Garland Peak.....	Stehekin.....	Chelan.....	7,545
Gibraltar, highest point of upper end of Cowlitz Cleaver.....	Mount Rainier National Park.....	Pierce.....	12,679
Gibraltar Mountain.....	Republic.....	Ferry.....	3,783
Glacier Basin, Starbo Camp.....	Mount Rainier National Park.....	Pierce.....	5,935
Glacier Peak.....	Glacier Peak.....	Snohomish.....	10,436
Goat Butte.....	Mount Adams.....	Yakima.....	7,487
Goat Island Mountain.....	Mount Rainier National Park.....	Pierce.....	7,301
Goat Mountain.....	Mount Baker.....	Whatcom.....	5,514
Do.....	Okanogan.....	Okanogan.....	5,290
Goat Peak.....	Mount Aix.....	Yakima.....	6,494
Goat Rocks.....	Mount Adams.....	do.....	8,201
Goat triangulation station, on highest point of Mount Wow.....	Mount Rainier National Park.....	Pierce.....	6,030
Gold City, junction of trails.....	do.....	do.....	2,752
Gold Hill.....	Chopaka.....	Okanogan.....	4,620
Gold Mountain.....	Stilaguamish.....	Snohomish.....	3,493
Governor's Ridge.....	Mount Rainier National Park.....	Pierce.....	6,614
Grand Park, south end.....	do.....	do.....	5,736
Granite Butte.....	Oakesdale.....	Whitman.....	2,930
Granite Mountain.....	Republic.....	Ferry (west side).....	5,326
Do.....	do.....	Ferry (center).....	5,912
Do.....	Snoqualmie.....	King.....	5,820
Green Mountain.....	Glacier Peak.....	Snohomish.....	5,957
Green Pass.....	Snoqualmie.....	King-Kittitas.....	4,894
Gunn Peak.....	Skykomish.....	Snohomish.....	6,245
Hannegan Pass.....	Mount Baker.....	Whatcom.....	4,962
Hart Lake, water surface.....	Stehekin.....	Chelan.....	3,890
Haystack Mountain.....	Mount Vernon.....	Skagit.....	4,126
Helen Butte.....	Mount Baker.....	Skagit.....	5,490
Helena Peak.....	Stilaguamish.....	Snohomish.....	5,392
Higgins Mountain.....	do.....	Skagit.....	5,202
Horse Heaven Hills.....	Zillah.....	Klickitat-Yakima.....	4,035
Horse Lake, triangulation station.....	Wenatchee.....	Chelan.....	4,586
Horseshoe Mountain.....	Chopaka.....	Okanogan.....	7,930
Howard Lake, water surface.....	Mount Adams.....	Yakima.....	4,887
Hubbard Peak.....	Skykomish.....	Snohomish.....	5,925
Huckleberry Mountain.....	Glacier Peak.....	Skagit-Snohomish.....	5,355
Hull Mountain.....	Osoyoos.....	Okanogan.....	5,110
Ind ex Mountain.....	Skykomish.....	Snohomish.....	6,125
Irene Mountain.....	Republic.....	Okanogan.....	4,712
Iron Mountain.....	do.....	Ferry.....	4,807
Do.....	Stilaguamish.....	Skagit.....	4,886
Issaquah.....	Seattle.....	King.....	96
Johns Butte.....	Mount Adams.....	Yakima.....	5,918
Jumbo Mountain.....	Stilaguamish.....	Snohomish.....	5,806
Kachess Lake, water surface.....	Snoqualmie.....	Kittitas.....	2,226
Kamiak Mountain.....	Pullman.....	Whitman.....	3,650
Keechelus Lake, water surface.....	Snoqualmie.....	Kittitas.....	2,458
Kent.....	Tacoma.....	King.....	50
Kickerville.....	Blaine.....	Whatcom.....	213
King Mountain.....	Sumas.....	do.....	521
Kruger Mountain.....	Osoyoos.....	Okanogan.....	2,890
Ladow Butte.....	Pullman.....	Whitman.....	3,302
Lake Chelan, water surface.....	Chelan-Methow.....	Chelan.....	1,079
Lake George, water surface.....	Mount Rainier National Park.....	Pierce.....	4,232
Lake Goodwin, water surface.....	Mount Vernon.....	Snohomish.....	329
Lake Stevens, water surface.....	do.....	do.....	212
Lake Tapps, water surface.....	Tacoma.....	Pierce.....	516
Lake Terrell, water surface.....	Blaine.....	Whatcom.....	208
Lake Union, water surface.....	Seattle.....	King.....	12
Lake Washington, water surface.....	do.....	do.....	22
Lakeview Mountain.....	Mount Adams.....	Lewis-Yakima.....	6,661
Lemanasky Mountain.....	Chopaka.....	Okanogan.....	5,206
Liberty Cap.....	Mount Rainier National Park.....	Pierce.....	14,112
Liberty Lake, water surface.....	Spokane.....	Spokane.....	2,052
Lichtenberg Mountain.....	Skykomish.....	Chelan.....	5,920
Little Mount Adams.....	Mount Adams.....	Yakima.....	6,815
Little Tahoma, high rock point 2.5 miles east of sum- mit of Mount Rainier.....	Mount Rainier National Park.....	Pierce.....	11,117
Long Mountain.....	Stilaguamish.....	Snohomish.....	5,109
Lookout Mountain.....	Methow.....	Okanogan.....	5,692
Do.....	Mount Stuart.....	Kittitas.....	3,440
Loomis Mountain.....	Mount Baker.....	Whatcom.....	5,521
McNeill Peak.....	Mount Aix.....	Yakima.....	6,788

Locality.	Quadrangle.	County.	Elevation. Feet.
Marble Peak.....	Stilaguamish.....	Snohomish.....	5,156
Maverick Peak.....	Chiwaukum.....	Chelan.....	5,308
McNeeley Peak.....	Mount Rainier National Park.	Pierce.....	6,806
McClure Rock, triangulation station.....	do.....	do.....	7,384
Merchant Peak.....	Skykomish.....	Snohomish.....	5,466
Miller Peak.....	Mount Stuart.....	Chelan-Kittitas.....	6,460
Mineral Hill.....	Chopaka.....	Okanogan.....	5,500
Montborne.....	Mount Vernon.....	Skagit.....	116
Mother Mountain.....	Mount Rainier National Park.	Pierce.....	6,540
Mount Adams.....	Mount Adams.....	Yakima.....	12,326
Mount Aix.....	Mount Aix.....	do.....	7,805
Mount Annie.....	Osyoos.....	Okanogan.....	6,056
Mount Ararat.....	Mount Rainier National Park.	Pierce.....	5,996
Mount Baker.....	Mount Baker.....	Whatcom.....	10,750
Mount Carlton.....	Spokane.....	Spokane.....	5,808
Mount Josephine.....	Mount Baker.....	Skagit.....	3,860
Mount McCay.....	Chopaka.....	Okanogan.....	7,628
Mount Rainier, highest snow summit (highest point in State yet determined).	Mount Rainier National Park.	Pierce.....	14,408
Mount Rainier National Park, on high lone rock on divide between South Fork of Mowich River and North Fork of Puyallup River, 3 miles from west boundary of park, marked by cairn of rocks 4 feet high; aluminum tablet stamped "C977 V. A."	do.....	do.....	6,965
Mount St. Helens.....	Mount St. Helens.....	Skamania.....	9,671
Mount Stuart.....	Mount Stuart.....	Chelan.....	9,470
Naches Pass.....	Snoqualmie.....	King-Pierce, Kittitas-Yakima.	4,988
Naff Ridge.....	Oakesdale.....	Whitman.....	3,033
Newman Lake, water surface.....	Spokane.....	Spokane.....	2,130
Oak Hill.....	Mount Adams.....	Yakima.....	2,830
Observation Rock triangulation station, on high sharp rock on divide between Carbon and Mowich River glaciers, and 2 miles southeast of spray Park triangulation station, rock cairn 6 feet high; tablet stamped "8376 V. A."	Mount Rainier National Park.	Pierce.....	8,364
Old Baldy.....	Chopaka.....	Okanogan.....	7,870
Do.....	do.....	do.....	5,230
Old Seab Mountain.....	Wenatchee.....	Chelan-Kittitas.....	6,887
Osyoos Lake, water surface.....	Mount Aix.....	Yakima.....	6,642
Oval Peak.....	Osyoos.....	Okanogan.....	913
Palmer Lake, water surface.....	Methow.....	do.....	8,800
Palmer Mountain.....	Chopaka.....	do.....	1,150
Park, on bald hill on divide between Muddy Fork and Ohanapocosh River, in south edge of Cowlitz Park, about 1.5 miles north of trail crossing. Bronze tablet stamped "5580."	do.....	do.....	4,370
Parrygin Lake, water surface.....	Mount Rainier National Park.	Pierce.....	5,572
Patterson Lake, water surface.....	Methow.....	do.....	2,020
Peacock Mountain.....	do.....	do.....	2,380
Peak Success.....	Chopaka.....	do.....	4,520
Pilchuck.....	Mount Rainier National Park.	do.....	14,150
Pilchuck Mountain.....	Mount Vernon.....	Snohomish.....	139
Pinnacle Peak triangulation station.....	Stilaguamish.....	do.....	5,334
Pinnacle Peak triangulation station on Tatoosh Range directly south of Reflection Lake, V. A. B. M. is bronze tablet set in rock 8 feet north of monument marking triangulation station, stamped "6566."	Mount Rainier National Park.	Lewis.....	6,562
Poland Butte.....	do.....	Lewis.....	6,562
Prairie Mountain.....	Mount Adams.....	Yakima.....	3,143
Pugh Mountain.....	Glacier Peak.....	Snohomish.....	5,670
Do.....	do.....	do.....	7,150
Pyramid Mountain.....	do.....	do.....	7,150
Pyramid Peak.....	Stehekin.....	Chelan.....	8,240
Pyramid Peak triangulation station.....	Snoqualmie.....	King-Kittitas.....	5,723
Rainier Fork, peak north of divide at head of Rainier Fork of American River.	Mount Rainier National Park.	Pierce.....	6,937
Rattlesnake Hills.....	do.....	do.....	6,231
Rattlesnake Ridge.....	Priest Rapids.....	Yakima.....	2,515
Red Butte.....	Zillah.....	do.....	3,007
Red Mountain.....	Mount Adams.....	do.....	7,203
Do.....	Glacier Peak.....	Snohomish.....	6,930
Riley Lake, water surface.....	Snoqualmie.....	Kittitas.....	5,707
Ruby Hill.....	Stilaguamish.....	Snohomish.....	525
	Okanogan.....	Okanogan.....	4,950

Locality.	Quadrangle.	County.	Elevation.
			<i>Feet.</i>
Ruth Mountain.....	Mount Rainier National Park.	Pierce.....	8,700
Saddle Mountain.....	Red Rock.....	Grant.....	2,696
St. Elmo Pass.....	Okanogan.....	Okanogan.....	7,415
Salt Lake Hill.....	do.....	do.....	2,960
Sammamish Lake, water surface.....	Seattle.....	King.....	35
Sauk Mountain triangulation station.....	Mount Baker.....	Skagit.....	5,510
Saxton Rock.....	Mount Adams.....	Yakima.....	4,413
Seymour Peak.....	Mount Rainier National Park.	Pierce.....	6,351
Shaw Mountain.....	Mount Adams.....	Klickitat.....	3,620
Sheep Mountain.....	Glacier Peak.....	Snohomish.....	6,120
Shuksan Mountain triangulation station.....	Mount Baker.....	Whatcom.....	9,038
Signal Peak.....	Mount Adams.....	Yakima.....	5,111
Skyscraper Mountain.....	Mount Rainier National Park.	Pierce.....	7,065
Sloan Peak.....	Glacier Peak.....	Snohomish.....	7,790
Sluski Mountain.....	Mount Rainier National Park.	Pierce.....	7,015
Snipes Mountain.....	Zillah.....	Yakima.....	1,290
Snoqualmie Lake, water surface.....	Skykomish.....	King.....	3,225
Snoqualmie Mountain.....	Snoqualmie.....	do.....	6,270
Snowshoe Butte.....	do.....	King-Kittitas.....	5,139
Sourdough Mountain, on rocky summit at extreme southeast end of Sourdough Mountains, about 0.5 mile north of trail between Huckleberry Parks; bronze tablet stamped "7016."	Mount Rainier National Park.	Pierce.....	7,006
Spanaway Lake.....	Tacoma.....	do.....	329
Spangle.....	Oakesdale.....	Spokane.....	2,431
Spectacle Lake, water surface.....	Chopaka.....	Okanogan.....	1,351
Spire Mountain.....	Skykomish.....	Snohomish.....	6,065
Spire Point.....	Glacier Peak.....	Chelan-Skagit.....	8,220
Squak Mountain.....	Seattle.....	King.....	1,980
Squalicum Mountain.....	Sumas.....	Whatcom.....	1,525
Steamboat Prow (summit of "The Wedge").....	Mount Rainier National Park.	Pierce.....	9,702
Steptoe Butte.....	Oakesdale.....	Whitman.....	3,613
Stevens Pass.....	Skykomish.....	Chelan-King.....	4,061
Stevens Peak triangulation station, southeast end of Tatoosh Range.	Mount Rainier National Park.	Lewis.....	6,511
Stilaguamish Peak.....	Glacier Peak.....	Snohomish.....	5,683
Stormy Mountain.....	Chelan.....	Chelan.....	7,219
Stratton Butte.....	Oakesdale.....	Whitman.....	3,300
Strawberry Mountain.....	Osoyoos.....	Okanogan.....	4,750
Sugarloaf Peak.....	Chiwaukum.....	Chelan.....	5,840
Sumner.....	Tacoma.....	Pierce.....	74
Swan Lake, water surface.....	do.....	King.....	478
Table Mountain.....	Mount Stuart.....	Kittitas.....	6,243
Tekoa Mountain.....	Oakesdale.....	Spokane-Whitman.....	4,006
Temple Mountain.....	Skykomish.....	King.....	3,570
Thornton.....	Oakesdale.....	Whitman.....	2,297
Three Brothers.....	Mount Stuart.....	Chelan.....	7,370
Three Fingers.....	Stilaguamish.....	Snohomish.....	6,845
Tieton Peak.....	Mount Aix.....	Yakima.....	7,775
Tiffany Mountain.....	Chopaka.....	Okanogan.....	8,275
Tillicum Point.....	Mount Rainier National Park.	Pierce.....	6,654
Timberwolf Mountain.....	Mount Aix.....	Yakima.....	6,435
Tolmie Peak triangulation station, on highest point of Tolmie Peak on divide between Carbon and Mowich rivers, 1.5 miles northwest of Crater Lake, marked by cairn of rocks; aluminum tablet stamped "5951 V. A."	Mount Rainier National Park.	Pierce.....	5,939
Tomyhoi Peak.....	Mount Baker.....	Whatcom.....	7,889
Toppenish Ridge.....	Zillah.....	Yakima.....	2,093
Toroda Mountain.....	Republic.....	Okanogan.....	4,621
Townsend Mountain.....	Skykomish.....	Snohomish.....	5,405
Trapper Lake, water surface.....	Glacier Peak.....	Chelan.....	4,300
Tumtum Peak.....	Mount Rainier National Park.	Pierce.....	4,678
Tunk Mountain.....	Osoyoos.....	Okanogan.....	6,065
Twin Lakes, water surface.....	Chiwaukum.....	Chelan.....	2,808
do.....	Stilaguamish.....	Snohomish.....	660
Twin Peaks.....	Glacier Peak.....	do.....	5,995
Twisp Pass.....	Stehekin.....	Chelan-Okanogan.....	6,066
Two Lakes, water surface.....	Mount Adams.....	Yakima.....	4,259
Tyee Mountain.....	Chelan.....	Yakima.....	4,285
Umpatanum Ridge.....	Ellensburg.....	Chelan.....	6,688
		Yakima.....	4,217

Locality.	Quadrangle.	County.	Elevation.
			<i>Feet.</i>
Unicorn Peak.....	Mount Rainier National Park.	Lewis.....	6,939
Vesper Peak.....	Stillaguamish.....	Snohomish.....	6,190
Wahpenayo Peak.....	Mount Rainier National Park.	Lewis.....	6,234
Walupt Lake, water surface.....	Mount Adams.....	do.....	3,927
Wannacut Lake, water surface.....	Chopaka.....	Okanogan.....	1,847
Waptus Lake, water surface.....	Skykomish.....	Kittitas.....	2,980
Wenatchee Lake, water surface.....	Chiwaukum.....	Chelan.....	1,870
Wenatchee triangulation station.....	Wenatchee.....	do.....	6,754
Whisky Mountain.....	Osoyoos.....	Okanogan.....	2,837
Whitechuck Mountain.....	Glacier Peak.....	Snohomish.....	6,935
White Horse Mountain.....	Stillaguamish.....	do.....	6,820
Whitestone.....	Osoyoos.....	Okanogan.....	2,867
Whitman Crest.....	Mount Rainier National Park.	Pierce.....	8,262
Windy Pass.....	Stillaguamish.....	Snohomish.....	3,705
Windy Peak.....	Chopaka.....	Okanogan.....	8,345
Winthrop Glacier, lower end.....	Mount Rainier National Park.	Pierce.....	4,872

INDEX.

A.	Page.		Page.
Abbot School.....	133	Bandera.....	23
Aberdeen.....	58, 72, 73	Bandli, E. M., leveling by.....	7, 24, 44, 54, 60, 80, 82, 100, 164, 165
Abraham, Sam, house.....	53	Barlow Pass.....	55
Addy.....	31	Barneston.....	22, 23
Adrian.....	15, 16	Barron.....	143, 144
Aeneas, Chief, ranch.....	103	Battomly ranch.....	101
Aeneas, Joe, ranch.....	103	Beall, Loyd, ranch.....	35
Aeneas Creek.....	35	Bear Creek.....	131
Aeneas Lake.....	35	Bear Gap.....	78
Agate.....	28	Beatrice.....	37
Akron.....	37	Beaver Creek, Cedar Lake quadrangle.....	21
Alder.....	46	Chiwaukum quadrangle.....	33
Creek.....	33	Republic quadrangle.....	136
Alderdale.....	17, 18	Belfast.....	139
Alderton.....	162, 163	Belleville.....	139
Alfalfa.....	183	Bellingham & Northern R. R.....	160, 168
road.....	186	Bellvue ranch.....	32
Alger.....	139	Belmont.....	95
Alkire.....	63	Belmore.....	29, 100
Alma.....	97, 100	Bench marks, description of.....	6
Almira.....	180	plate showing.....	5
Alpha.....	27, 28	Bend.....	16, 120
Alpowa.....	14	Benson ranch.....	123, 128
Alta Lake.....	97	Benton City.....	111
Alto.....	172	Berne.....	32
American River.....	78	Best ranch.....	102
Anderson quadrangle.....	7-8	Beverly.....	16, 17, 182
Anson.....	166	quadrangle.....	16-17
Antoine ranch.....	59	Bickleton.....	11, 12
Antoine Valley.....	102	Big Creek.....	147
Appledale.....	106	Big Lake.....	93
Ardon Spur.....	31	Big Muddy Creek.....	77
Argo.....	142	Big Salmon Lasac.....	147
Ariel.....	141, 167, 168	Biggs, L. F., leveling by.....	62, 83, 86, 140, 141, 167
Arlington, Mount Vernon quadrangle.....	91, 92, 94	Birdseye, C. H., elevation of Mount Rainier determined by.....	2
Arlington quadrangle.....	8-13	Birdsview.....	78
Arney Spur.....	104	Birkett, D. S., leveling by.....	8, 14, 16, 17, 22, 38, 41, 51, 52, 57, 74, 104, 106, 109, 111, 112, 119, 122, 127, 130, 134, 136, 145, 147, 148, 159, 161, 163, 164, 166, 169, 175, 177, 181, 187
Arnold, Sidney, leveling by.....	77	Bishop ranch.....	129
Arrowsmith's ranch.....	120	Black Creek.....	57
Ashford.....	47, 80, 81	Black River.....	142, 161, 164
Asotin quadrangle.....	14-15	Blaine.....	17
Atanum Creek.....	49, 50	quadrangle.....	17
Auburn.....	161, 163	Blalock.....	169
Avon.....	93	Blalock Island quadrangle.....	17-19
		Blanchard, George, house.....	127
B.		Blewett.....	89
Badd siding.....	138	Blue Canyon.....	139
Bacon quadrangle.....	15-16	Blue Creek.....	31
Bacon Creek.....	76, 77	Blue Lake.....	35, 36
Badger.....	107, 108	Bluelight.....	187
Mountain.....	31	Boardman Creek.....	155
Baird.....	41, 59		
Bair, Alvin, house.....	50		
Bair ranch.....	52		
Baker.....	78, 79		
Lake.....	80		

	Page.		Page.
Bolles Junction.....	171, 172	Central.....	160
Bonaparte Creek.....	102	ferry.....	99
Bordens Creek.....	56	Centralia.....	26, 28, 54
Borup.....	146	Chamberlain ranch.....	48
Bosburg.....	69	Chambers.....	128
Boundary.....	37	Chandler siding.....	121
Bow.....	139	Chard.....	181
Bowers, Jake, land.....	56	Chattaroy.....	150, 151
Boulder Creek, Mount Baker quadrangle.....	79	Chehalis.....	26, 28
Snoqualmie quadrangle.....	147	quadrangle.....	24-29
Boylston.....	182	Chelan.....	30, 59
Brender Canyon.....	89	Falls.....	60
Brewster.....	97	quadrangle.....	29-31
ferry.....	99	River.....	60
Bridge Creek.....	153	Cheney.....	133, 138
Bridge 17.....	155	Chenge Creek.....	22
Bridgeport.....	98	Chenois Creek.....	19
Bright Spot mining camp.....	35	Chesaw.....	103
Bristol.....	88	Chester.....	152
British Columbia boundary.....	36, 103, 144, 145	Cheviot.....	182
Brown Bear mine.....	33	Chewawa Creek.....	154
Bruce.....	104	Chewelah.....	31
Brush Prairie.....	118	quadrangle.....	31
Bryant.....	91	Chewilken Valley.....	102
Bucher, H., leveling by.....	109	Chicago, Milwaukee & St. Paul Ry.....	16,
Buck Creek.....	154	22, 37, 57, 105, 134, 148, 166, 182	
Buckeye ranch.....	49	Chickman Creek.....	33, 34
Buckley.....	162	Chilikoot Summit.....	69
Bucoda.....	25, 26	Chiliwist road.....	99
Bumping River.....	78	Chiwaukum.....	32, 33
Bunn's Canyon.....	30	Creek.....	33
Bur Lake.....	53	quadrangle.....	31-34
Burge's ranch.....	48	Summit.....	32, 33
Burlington.....	91, 93	Chopaka quadrangle.....	34-36
Burr Canyon.....	38	Chowndings.....	156
Burr siding.....	178	Christensen, Louis, ranch.....	49
Burrows.....	19	Chuckanut Creek.....	139
Bush Creek.....	53	Chuckanut switch.....	139
Byers Landing.....	110	Chumstick Canyon.....	32, 33
Byrne, P. F., leveling by.....	29, 153	Chumstick School.....	33
Byron.....	121	Cinebar.....	27, 44
C.		Clallam quadrangle.....	36
Cactus.....	38	Clayton.....	133
Camas Creek, Kalama quadrangle.....	62	Cle Elum.....	88, 90
Mount Stuart quadrangle.....	89	Lake.....	147, 148
Camp Creek.....	147	Clear Creek.....	157
Canton.....	21, 22	Clear Lake.....	91
Canyon.....	181	Clearbrook.....	160
Creek, Slate Pass quadrangle.....	143	Cleveland.....	11
Creek, Stilaguamish quadrangle.....	156, 157	Clover School.....	100
School.....	42	Coal mines.....	33
Cape Elizabeth quadrangle.....	19-20	Cobb ranch.....	99
Carley.....	17, 18	Cohasset.....	16
Carlock, J. H., leveling by.....	149	Coker.....	137
Carrollton.....	63	Cole, Frank, leveling by.....	89, 147
Cascade Creek.....	90	Colfax.....	128
Cascade summit.....	56, 142	Colletta.....	134, 135
Cascade tunnel.....	142	Colocham Creek.....	67
Castello ranch.....	136	Colton.....	130
Castlerock, Blalock Island quadrangle.....	17, 18	Colville.....	36
Castle Rock, Kalama quadrangle.....	60, 61, 63	quadrangle.....	36-37
Cedar Lake.....	24	Reservation.....	98
quadrangle.....	20-24	Columbia.....	168
Cedar Point.....	64	Columbia & Puget Sound R. R.....	23, 165
Cedar River.....	22	Columbia River.....	9,
		29, 30, 51, 66, 67, 98, 99, 109, 120	

	Page.		Page.
Conconully.....	34	Deschutes River.....	100
Concord.....	137	Devils Point.....	64
Connell.....	38, 40	Dewey triangulation station.....	59
quadrangle.....	37-41	Diamond.....	128
Conrad, D. N., ranch.....	120	Divide.....	175
Cooledge, Earl, house.....	115	Dixie.....	170
Copalis.....	20, 112	Dodge.....	181
crossing.....	19, 20	Donoho ranch.....	186, 187
Copper.....	170, 171	Dot.....	10, 11, 13
Corfu.....	134, 166	Douglas, E. M., direction by.....	5
Corral Creek.....	77	Douglas.....	59
Cosmopolis.....	73	Dowling bridge.....	129
Cottonwood.....	96	Dragoon.....	150
Cougar.....	86	Drumhiller ranch.....	74
Coulee.....	59	Dry Creek, Connell quadrangle.....	38
City.....	41	Mount Stuart quadrangle.....	89
quadrangle.....	41	Duber cabin.....	56
Country Club.....	7	Dudley.....	88
Covill.....	116	Dungeness.....	43
Covington.....	161	Lighthouse.....	43, 44
Cowiche Creek.....	49	quadrangle.....	43-44
Cowiche Ridge.....	77	Dupont.....	7, 8
Colitz.....	26, 27, 62		
Pass.....	77	E.	
River.....	60, 84	East Clallam.....	36, 66, 131, 132
Cox ranch.....	136	East Spokane.....	151
Coyote Rapids.....	42	Eastman.....	170
quadrangle.....	41-42	Easton.....	146
Crab Creek.....	15	Eatonville.....	46
Crater.....	106	quadrangle.....	44-47
Crawford place.....	17	Edgar, Frank, ranch.....	79
Creston.....	179	Ediz Lighthouse.....	113
Cross Creek.....	33	Edwards ranch.....	36
Crowe, H. S., leveling by.....	21, 38, 47, 88, 106, 108, 109, 121, 133, 137, 138, 161, 174, 181, 183, 185	Elbe.....	46, 47
Crystal Butte mine.....	103	Elberton.....	128
Cunningham.....	37	Elbow Coulee.....	70
Curlow.....	136	Electron.....	46, 165
Curry.....	40	Elk.....	150
Custer.....	17	Creek.....	82, 83
Cutts ranch.....	102	Ellensburg.....	47, 89, 167, 183
		quadrangle.....	47-50
D.		Elliott Creek.....	55, 56
Damon Point.....	112	Eltopia.....	108, 109, 174, 175
Danz, Fred, ranch.....	115	Elwha.....	80, 118
Darrington.....	158	Emery.....	38, 40
"burn".....	157	English.....	91
Datum, inland, marking of.....	7	Ennis ranger station.....	114
Davenport.....	43	Enterprise.....	17
quadrangle.....	42-43	Entiat River.....	29, 30
Davis, "Cashup," ranch, Oakesdale quad- rangle.....	96	Enumclaw.....	21
Davis house, Spokane quadrangle.....	150	Ephrata.....	15, 51, 180
Davis ranch, Oakesdale quadrangle.....	95	quadrangle.....	50-51
Okanogan quadrangle.....	97	Estes siding.....	39
Day Lake.....	94, 159	Eureka.....	176, 177
Dead Canyon.....	18	Evans, John R., leveling by.....	17, 121
Deadman Creek.....	15	Everson.....	160
Deep Creek, Chiwaukum quadrangle.....	33	Expansion triangulation station.....	168
Reardan quadrangle.....	133		
Deer Creek trail.....	158, 159	F.	
Deer Park.....	151	Fairfield.....	95
Defland ferry.....	98	Fairhaven.....	17
Delaney.....	181	Fairholm.....	64, 65, 66, 130, 131
Delta.....	17	Fair View School, Prosser quadrangle.....	125
Deming.....	169	Fairview School, Port Angeles quadrangle.....	114
		Fallon.....	128
		Falls Creek, Glacier Peak quadrangle.....	56
		Mount Stuart quadrangle.....	90
		Fanning ranch.....	14

	Page.
Farmer, R. A., leveling by	15, 29, 31, 36, 41, 50, 59, 66, 68, 74, 106, 132, 133, 167, 178, 180
Farmer	59
Farmington	95
Farrington	38, 39, 178
Felida	119, 140
Fellows, F. E., leveling by	34, 96, 101, 135, 185
Fellows	43
Ferndale	17
Ferris ranch	69, 70
Figure 2 ranch	120
Fir	91, 93
Fish Lake, Chopaka quadrangle	34, 35
Republic quadrangle	136
Skykomish quadrangle	142
Fish Trap	138
Fishhook Ferry	175, 177
Fordnah quadrangle	51-52
Forest	28
Fort Simcoe	53
quadrangle	52-54
Fort Spokane	43
Fortune Creek	147
Fortyfive Mining Co.'s works	154, 155
Fountain	10
Fowler ranch	129
Franklin ranch	187, 188
Fredonia	93
Freeman	152
French Mountain	134
French place	50
Frischneckt Spur	40
Fry, E. M., leveling by	14, 29, 31, 34, 59, 63, 67, 68, 69, 74, 95, 96, 101, 128, 135, 143, 149
Fry	153, 178

G.

Galena	143
Gannett, S. S., work of	5
Garcia	22
Garfield	95
Gate	54
quadrangle	54
Gelbach, W. A., leveling by	91
Gerdine, T. G., direction by	5
Getchell	92
Gibbon	121
Gilbert cabin	56
Gilbert camp	70, 153
Glacier	78
Glacier Peak quadrangle	54-56
Glade, Pasco quadrangle	108, 109
Prosser quadrangle	125, 126
Glade Creek	18
Glanzman's, H., ranch	41
Glenwood	77
Goat Creek	84
Goat Lake	55, 56
Gold Creek	78
Golden	35
Golden Zone stamp mill	36
Goldendale road	186
Goode, R. U., direction by	5
Goose Prairie	78
Govan	180

	Page.
Graff, Fred, leveling by	154
Graff, John, leveling by	54
Grandstrom's	94
Granger	184, 188
Granite Falls	92, 154, 155, 156
Grasmere	79
Gray Gables	19
Grays Harbor City	19, 72
Great Northern Ry.	15,
17, 30, 31, 32, 36, 50, 66, 67, 68, 91, 93, 106,	
133, 139, 142, 149, 150, 152, 178, 179, 180	
Green Canyon	90
Green River, Cedar Lake quadrangle	21, 22
Mount St. Helens quadrangle	85, 86
Green Spur	179
Griffin ranch	101
Grouse Creek	33
Guv	129

H.

Hadley, H. M., leveling by	78
Hagman, G. L., leveling by	19, 57, 71, 111
Half-tide level, definition of	6
Halfway House	42
Hall ranch	35
Hamilton	78
Hamlet Spur	104
Hanford	51, 52
Hangman Creek	152
Hansen, F. V., ranch	49
Hanson Creek	23
Harbaugh ranch	53
Harper ranch	50
Hartford Junction	92
Hartle ranch	70
Hartline	41
Harts Pass	143, 144
Harvey ranch	136
Hatton	37, 38
Hauser Junction	148
Haven	42
Hawthorn store	103
Hefty, J. G., leveling by	36, 68
Hehe rock	103
Henry's switch	23
Hicksville quadrangle	56-57
High Point	159
Hilda	65
Hill, C. E., leveling by	31, 52, 76, 153
Hill, W. R., leveling by	96
Hill house	50
Hinekle ranch	50
Hobart	23
Hodges ranch	123
Holbrook, Philo, jr., leveling by ..	41, 42, 133, 179, 181
Holz	46
Hoquiam	58, 59, 72
Horn School	96
Horton, W. F., house	152
Hot Springs	21, 22
Houser	181
Hughes Creek	118
Humtulpis quadrangle	57-59
Hunts Junction	173, 174, 175
Hurd house	63
Hutchinson, C. J., leveling by	77, 147

I.	Page.	L.	Page.
Idaho-Washington line.....	150	La Conner.....	93
Idleat Creek.....	53	La Roche cabin.....	144
Index.....	159	Lacey.....	101
Indian cabins.....	98	Lady Creek.....	9
Indian Creek.....	77	Lagrande.....	46
Indian Tulee house.....	186	Lake Cavanaugh.....	94
Inland.....	45	Lake Chelan.....	29, 30, 153
International boundary.....	36, 103, 144, 145	Lake Crescent.....	64, 117
Iolanthe siding.....	22	quadrangle.....	64-66
Iowa Flat.....	124	Lake Kachess.....	147, 148
Irrigon triangulation station.....	18	Lake Keechelus.....	147, 148
Irvin.....	149	Lake Pleasant quadrangle.....	66
Issaquah.....	145, 164	Lake Roesiger.....	160
		Lake Sutherland.....	117, 118
J.		Lakeside.....	29, 30
Jackson.....	181	Lakeview.....	7, 8, 166
Jacobs, G. C., leveling by.....	17, 78, 139, 160, 179	Lamar.....	172, 176
Jameson quadrangle.....	59-60	Lamberson ranch.....	49
Jenson, P. L., place.....	185	Lambert ranch.....	71
Jericho.....	16, 134	Lamberton.....	168
Joe Pott's clearing.....	158	Lamming store.....	102
Johns ranch.....	96	Lamont place.....	160
Johnson.....	128	Langley triangulation station.....	20
Joyce.....	64, 65, 117	Latah.....	95
Junction.....	152	Laurel School.....	160
Junction City.....	73, 74	Lauridsen.....	116
		Lazebrook place.....	133
K.		Leavenworth.....	32
Kahlotus.....	39	Lee, James, ranch.....	75
Kalama.....	62, 63, 140, 141	Leslie ranch.....	42
quadrangle.....	60-63	Lester.....	146
Kallock, H. K., leveling by.....	31, 48, 142, 146, 147, 159	Leveling, precise, method of.....	5
Kamaskat Junction.....	21, 22	primary, method of.....	5
Kane switch.....	179	Lewis Church.....	129
Kangley.....	22	Lewis River ranger station.....	86, 87
Kapowsin.....	46	Liberty.....	89
Kayle ranch.....	103	Lake.....	151
Kaylor.....	136	Limekiln.....	135
Keller quadrangle.....	63	Lind.....	37, 38, 56, 57
Kelley house.....	156	Lindburg.....	45
Kelley's ranch.....	84, 85	Little Klickitat River.....	77
Kelso.....	63	Little River.....	117
Kendall, G. H., leveling by.....	96	Littlerock.....	28, 29, 54
Kendall.....	168	Lochsloy.....	92
Kennewick.....	107, 108	Locke School.....	41, 52
Kent.....	161	Lockwood.....	152
Kerriston.....	23	Lone Star School.....	124
Kettle Falls.....	69	Longmire Springs.....	81
Keystone.....	137	Lookout Mountain.....	70
Kimball ranch.....	187	Loomis.....	35
Kings ranch.....	168	Loon Lake.....	31
Kiona.....	106, 107, 108, 111, 121	Loop Loop Creek.....	96, 97
Kipling.....	103	Louie, Manuel, ranch.....	136
Kirby School.....	130	Louis ranch.....	50
Kittitas.....	183	Lowdens.....	176
Canyon.....	48	Luke ranch.....	53
Klickitat River.....	77	Lyman.....	179
Klingard signal.....	129	Lynch ranch.....	136
Kline.....	138	Lynden.....	160
Knapp Coulee.....	29	Lyons.....	133
Knapp's ferry.....	29, 30	Lyre.....	65
Knaub house.....	120		
Knottingham ranch.....	38	M.	
Knude ranch.....	67	Mabton.....	127, 183, 184, 187
Koepp ranch.....	98	McCallum.....	89
Kosmos.....	81, 82	McClain, T. J., leveling by.....	168
		McClellan ranch.....	56



	Page.		Page.
Richland.....	110	Seattle, Port Angeles & Western Ry.....	65,
Ridgefield.....	140		113, 116, 131
Riffe.....	44, 45, 82	Seattle quadrangle.....	141-142
Rifle.....	170	Secondary elevations.....	189-194
Riggs, Thomas, leveling by.....	143	Secrist School.....	119
Ringold.....	51	Sedro Wooley.....	179
Flat.....	110	Seitz, R. C., leveling by.....	36,
Riparia quadrangle.....	136-137		43, 64, 65, 66, 80, 113, 116, 130
Ritell.....	57	Selah.....	182
Ritzville.....	137, 138	Seltice.....	95
quadrangle.....	137-138	Semore ranch.....	135
Riverside, Chopaka quadrangle.....	35, 98	Semper, C. H., leveling by.....	15,
Pullman quadrangle.....	128		16, 50, 66, 132, 133, 167, 178, 180, 182
Roberts, L. E., ranch.....	187	Seward.....	136
Robinson Creek.....	145	Shadow.....	65
Rochester.....	54	Shano Spur.....	41, 104
Rock Creek, Arlington quadrangle.....	10, 13	Shaw, R. B., leveling by.....	14, 38, 52, 56, 76
Cedar Lake quadrangle.....	22	Sherlock.....	8
Chiwaukum and Stehekin quadrangles.....	34,	Sherman Hotel.....	69
	153, 154	Shushuskin Canyon.....	48
Troutdale quadrangle.....	167	Silvana.....	91, 92
Rock Island.....	66, 67	Silver.....	71, 99, 100
Rock Lake quadrangle.....	138	Beach.....	160
Rockdale.....	148	Creek.....	27, 29, 44
Rockford.....	95	Lake, Kalama quadrangle.....	61
Rocklyn.....	43	Lake, Van Zandt quadrangle.....	168
Rocky Point.....	64	Silverton.....	154
Ronald.....	147	Simcoe Creek.....	53
Roosevelt.....	9, 10	Similkameen River.....	103
Rosalia.....	95	Sixprong.....	12
Roslyn.....	89	Skagit River.....	68
Roy.....	8, 24	Skykomish.....	143
Roza.....	181, 182	quadrangle.....	142-143
Ruby.....	100	Slate Creek.....	143
Creek.....	68	Sledgehammer Point.....	64
house.....	48	Slate pass quadrangle.....	143-145
Ruby City School.....	34	Smith ranch, Chiwaukum quadrangle.....	32
Rush ranch.....	16	Pullman quadrangle.....	129
Russell ranch.....	77	Smith, J. E., ranch, Methow quadrangle.....	71
Ryan.....	36, 69	Smyrna.....	134
Rye.....	182	Snake River.....	14, 107, 108, 174, 175, 177
Ryus, L. D., leveling by.....	54, 67, 78, 91, 154	Junction.....	178
S.		Snake signal station.....	174
Saddle Mountain.....	134, 166	Snively ranch.....	123
St. Helen.....	61, 62, 82	Snohomish quadrangle.....	145
St. Helens quadrangle.....	140-141	Snolden ranch.....	34
St. John's Church.....	119	Snoqualmie Pass.....	148
St. Peters Creek.....	135	Snoqualmie quadrangle.....	145-148
Salmon Creek, Portland quadrangle.....	119	Snover cabin.....	56
West Fork of, Chopaka quadrangle.....	134	Soda Spring.....	77
Samish.....	139	Solduc Hot Springs.....	65, 80
Lake quadrangle.....	139	South Aberdeen.....	72, 73
River.....	139	South Creek.....	153
Sapho.....	66, 131	South Prairie.....	162, 164
Sapolet.....	170	South Seattle.....	142
Sappenfield ranch.....	122, 126	South Tacoma.....	165
Sappenfield, W. B., ranch.....	187	South Toutle Canyon.....	87
Satus.....	183, 184, 186	Spangle.....	95
Sauk.....	158	Speckman ranch.....	37
River.....	54, 55	Spectacle Lake.....	35
Saxon switch.....	179	Spencer, L., ranch.....	187
Scott.....	38	Spider Creek.....	86, 168
Sea level, mean, definition of.....	6	Spirit Lake.....	83, 86
Seattle.....	141, 142	Spokane.....	133, 149, 150
Seattle & Lake Shore R. R.....	152	Spokane, Portland & Seattle Ry. 8, 17, 38, 152, 177	
		Spokane quadrangle.....	148-152

	Page.
Sprague.....	138
Avenue road.....	151
water tank.....	41
Springdale.....	31
Squaw Creek, Arlington quadrangle.....	13
Methow quadrangle.....	71
Stampede.....	146
Stanwood.....	91
Starbuck.....	136, 137, 173
Stehekin quadrangle.....	153-154
Stehekin River.....	153
Steptoe Butte.....	96
Steptoe Canyon.....	14, 130
Stilaguamish quadrangle.....	154-159
Stilaguamish River.....	94, 154, 155, 157
North Fork of.....	158
South Fork of.....	154, 156
Stimson Logging R. R.....	92
Stratford.....	15
Strombergs Canyon.....	32
Suiattle River.....	158
Sulphur.....	39, 40
Creek, Mount Baker quadrangle.....	79
Creek, Mount St. Helens quadrangle.....	85
Lake.....	39
Sultan quadrangle.....	159-160
Sultan River.....	159
Sumas.....	160
quadrangle.....	160
Summer.....	163
Summit, Tacoma quadrangle.....	165
Trinidad quadrangle.....	67, 167
Sunbath.....	16
Sundale.....	9, 10
Sunnyside, Samish Lake quadrangle.....	139
Zillah quadrangle.....	124, 127, 185, 188
canal.....	184, 185, 188
Sunset.....	96
Superior Mines.....	145
Swakane Creek.....	29, 30
Swank Creek.....	89
Swift Creek.....	79

T.

Tacoma.....	161, 162, 165
Tacoma Eastern R. R.....	45, 46, 47
Tacoma quadrangle.....	161-166
Talkire Lake.....	102
Tampico.....	50
Taneum Creek.....	90
Taunton.....	166
quadrangle.....	166-167
Taylor.....	23
Teaaway.....	88
Teaaway River, Middle Fork of.....	90
North Fork of.....	90
Tekoa.....	95
Tenino.....	25
Thein ranch.....	36
Thomas, R. I., leveling by.....	29
Thornton.....	95
Thornwood.....	179
Thorp.....	88, 90
Thrall.....	47
Tieton River.....	49, 50, 77
Timberman ferry.....	109, 110

	Page.
Tokio.....	137
Tomkinson triangulation station.....	150
Tonasket.....	101, 102
Creek.....	103
Toppenish.....	183
River.....	53
Torboy.....	135
Toroda.....	136
Torrent ranch.....	129
Touchet.....	176
Toutle.....	61
Toutle River.....	60, 61
ranger station.....	83, 87, 88
Trent.....	149
Trinidad.....	167
quadrangle.....	167
Troup ranch.....	129
Troutdale quadrangle.....	167-168
Troy.....	30
Tulalip.....	92
Indian Reservation.....	92
Tulips.....	19
Tumwater.....	100
Twin Creek.....	33
Twin Lake.....	153
Twin Rivers.....	65, 66
Twisp.....	70
Pass.....	153
Two Lakes.....	98
Tyler.....	138
Tzapass Creek.....	53

U.

Umatilla quadrangle.....	168
Umanum.....	181, 182
Union Mills.....	101
Uniontown.....	14, 130
U. S. Coast and Geodetic Survey, leveling by.....	20, 37, 38, 47, 88, 104, 106, 108, 121, 133, 137, 138, 141, 145, 148, 161, 173, 183
U. S. Corps of Engineers, leveling by.....	41, 51, 111, 119, 120
U. S. Reclamation Service, leveling by.....	50, 53, 54, 109, 120, 122, 127, 134, 148, 181, 184, 187, 188

V.

Vader.....	60
Vale.....	104
Valley.....	31
Van Brunt ranch.....	135
Vancouver.....	113, 140
Military Reservation.....	118
Van Wyck.....	160
Van Zandt.....	169
quadrangle.....	168-169
Veazie.....	21
Velox siding.....	149
Vogler Lake.....	79

W.

Wagonroad Coulee.....	35
Wahl.....	160
Wahluke.....	41, 42

	Page.		Page.
Waitsburg.....	171	White River.....	33
Walla Walla, Pasco quadrangle.....	108	White Sulphur Springs.....	59
Walla Walla quadrangle.....	169, 170	White's ranch.....	10
quadrangle.....	169-173	Whitman.....	169, 176
Wallula.....	174, 175	Whitney.....	93
quadrangle.....	173-178	Wickersham.....	179
Walsh.....	23	quadrangle.....	179
Wannacut Lake.....	35	Wilbur.....	179
Wapato.....	183	quadrangle.....	179-180
War Creek.....	70	Wilcox.....	129
Ward, C. C., leveling by.....	118	Wilderness, Cape Elizabeth quadrangle.....	19
Warden.....	105	Tacoma quadrangle.....	165
Warner School.....	168	Wilson Creek quadrangle.....	180
Washington, cooperation by.....	5	Wilson Creek Wash.....	180
Water ranch.....	100	Williams Creek.....	90
Waterville.....	30, 31	Williamson Creek.....	156
Wawamai.....	14, 129	Willow Springs.....	106
Wayside.....	150, 151	Winchester.....	50, 132, 180
Welcome School.....	169	Windy Pass.....	144
Wellington.....	142	Winlock.....	26, 60, 62
Welsh sawmill.....	135	Winona quadrangle.....	181
Wenas.....	47	Winthrop.....	70
Creek.....	48, 49	Wishkah.....	58
Wenatchee.....	32, 66, 67, 178, 179	Wood Creek.....	9
Lake.....	33	Woodland.....	140, 141
quadrangle.....	178-179	Woodlawn.....	160
River.....	31, 32, 33	Wooley.....	93
Wenner saline.....	99		
West Aberdeen.....	71, 72, 73		
West Shore School.....	75		
West Warden.....	57, 105		
Westbranch.....	151		
Weston.....	145		
ranch.....	69		
Wheatland School.....	124		
Wheeler, W. S., leveling by.....	91, 168, 179		
Whelan.....	128		
White Bluffs.....	52		
White Creek.....	76		

Y.

Yakima.....	47, 48, 182
quadrangle.....	181-183
Yale.....	86, 168
Yelm.....	24

Z.

Zillah.....	184
quadrangle.....	183-188
Zumwalt.....	112



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